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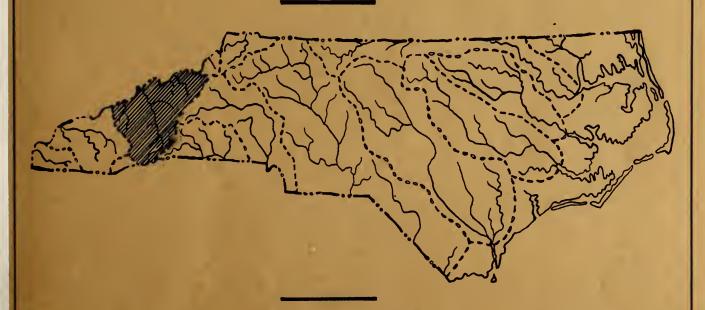


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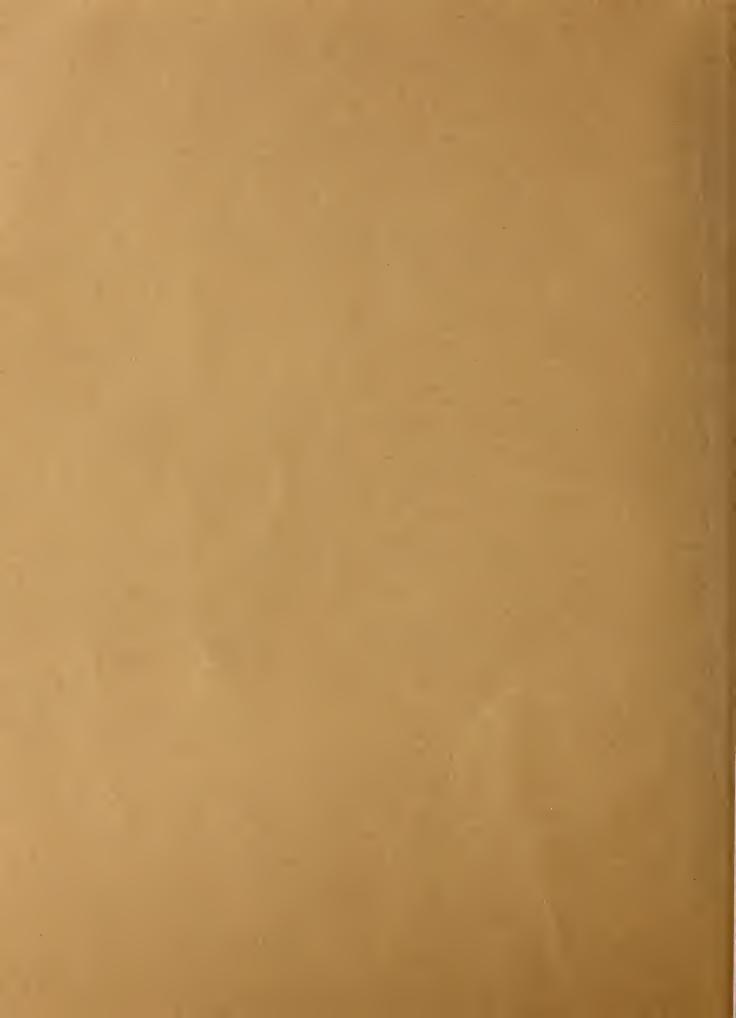
DIVISION OF WATER RESOURCES AND ENGINEERING
W.H.RILEY, PRINCIPAL ENGINEER

HYDROLOGIC DATA ON THE

FRENCH BROAD RIVER BASIN 1857-1945



PREPARED IN COOPERATION WITH UNITED STATES GEOLOGICAL SURVEY AND UNITED STATES WEATHER BUREAU 1950



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FOREWORD

This is the fifth of a series of publications giving hydrologic data in the State of North Carolina. Previous publications have been released under the titles of "Hydrologic Data on the Neuse River Basin," "Hydrologic Data on the Cape Fear River Basin," "Hydrologic Data on the Yadkin-Pee Dee River Basin," and "Hydrologic Data on the Catawba and Broad River Basins". It is planned to issue similar publications on each of the river basins of the State.

The purpose of this publication is not to supply all the hydrologic information collected in the French Broad River Basin, but to make available under one cover the information that can be readily used. Records at several Weather Bureau stations as well as at several stream flow stations are omitted as they would make the publication unnecessarily bulky and might be misleading to those that are not working with such data constantly. Full information on these stations can be obtained from the Division of Water Resources and Engineering of the Department of Conservation and Development, Raleigh, North Carolina, and its cooperating agency the U.S. Geological Survey, Raleigh, North Carolina. Complete climatological data can be obtained from the U.S. Weather Bureau, Raleigh, North Carolina.

Records of stream flow in this report have been compiled from records of the Water Resources Branch of the U. S. Geological Survey. Some of these are revised records and have not yet been published in the water-supply papers of the U. S. Geological Survey. Differences may be found between figures published in this report and those contained in official publications of the U. S. Geological Survey. The records presented herein are believed to be the latest revised figures. In such cases the matter should be checked with the district office of the Water Resources Branch, U. S. Geological Survey, Raleigh, North Carolina.

Water is one of the greatest natural resources in the French Broad River Basin. No other resource is more abundant or can serve the public in more beneficial ways, yet no other resource is subject to as much misuse. With wise planning and control, water can be made man's best servant; without wise planning and control, water can be man's greatest enemy. Every drop of water that passes to the sea is a loss to the public unless it has given up its full usefulness. By better planning the uses of this great resource, it can be made to serve a larger number of people to better advantage and pay larger dividends to the whole state.

Large industries, power plants, and other large users of water have now taken practially all of the locations where there is no question as to the amount of water being adequate for their uses. Today smaller water-sheds are being developed, and without records it is difficult to estimate the dependable flow with any degree of certainty. It is useless to think that industry will make a large investment at any site unless it can be assured of having sufficient water of suitable quality to meet its demands at all times.

Industry is one of the mainstays of our civilization. It provides employment for the citizens of a community and helps support the city, county, and State governments. Water is required by most industries either to furnish power or in the processing of raw materials. Requirements for supplies of water adequate in both quantity and quality are rigid. Since most industries must operate during all periods of the year and some of the elements present in the water may damage the final product, all data possible on the supplies of water should be readily available for use. As industries grow in the State some will need to expand their present plants, others will need to build plants, and still others may need to

change from ground water to surface water. In all of these instances the information in this publication will be found very useful.

Weather conditions often have their effects upon industries and may be the deciding factor in their location. Although the records of only five Weather Bureau stations appear in this publication, they are believed to be representative of general conditions throughout the whole basin.

Quality of water is playing a large part every day in the selection of water supplies for industrial and domestic use. Certain constituents can be very harmful to the final products of a great number of manufacturers and may be costly to remove. Many industries are greatly benefited in selecting their locations where information is available on the quality of water. The French Broad River and its tributaries has water suitable for the manufacturing of many products. Users of water will find analyses of some of the public water supplies very useful.

ACKNOWLEDGMENT

Grateful acknowledgment is made to Mr. E. B. Rice, District Engineer of the U. S. Geological Survey, for supplying information related to stream flow; to Mr. F. H. Pauszek, District Chemist of the U. S. Geological Survey, for supplying information on quality of water; to Mr. H. E. LeGrand, Assistant Geologist of the U. S. Geological Survey, for supplying information on ground water; to Mr. G. DeMots, Section Director of the U. S. Weather Bureau, for supplying information on rainfall and temperature; and to Mrs. Sallaine S. Upchurch, who has prepared the copy for the printers and assisted in assembling the data.

DESCRIPTION OF WATERSHED

The French Broad River Basin, located in the western part of North Carolina, extends entirely across the State from Tennessee to South Carolina. It is bounded on the east by the Broad and Catawba River basins and on the west by the Little Tennessee River Basin. The drainage area of the French Broad River Basin lying within this state covers 2,825 square miles.

The French Broad River Basin is located entirely in the Mountain Region. The south and east boundaries of the basin are formed by the Blue Ridge Mountains, the west by the Balsam Mountains and Tennessee Ridge, and on the northern part or North Carolina-Tennessee State line, are located the Great Smoky Mountains, through which the streams enter Tennessee. Included in the basin area are the New Found Mountains, Pisgah Ridge, Black, Bald, and Iron Mountains, and other lesser ranges. Highest elevation in the basin is attained at Mount Mitchell, elevation 6,684 feet, which is located near Asheville and has the distinction of being the highest peak east of the Rocky Mountains. The entire area is everywhere mountainous, but the topography is characterized by lower mountains or hills and valley lands lying between the higher ranges. The average elevation of the entire area is between 2,500 and 3,000 feet.

The French Broad River rises on the western slope of the Blue Ridge Mountains in Transylvania County. It flows northwesterly through the central part of the basin to enter Tennessee near Paint kock in Madison County. From this point it flows for a distance of 102 miles through Tennessee to join the Holston River at Knoxville, to form the Tennessee River.

The stream has a rather uniform gradient from its source, elevation 2,100 feet, to Asheville, elevation 1,960, having ancaverage slope of 2-1/3 feet per mile. Below this point the gradient of the river becomes steeper, the average fall being about 16 feet per mile to the Tennessee State line, elevation 1,240 feet.

Principal tributaries to the French Broad River that are located in North Carolina are: Pigeon River and Nolichucky River. Both of these streams originate in North Carolina and join the French Broad River in Tennessee.

Pigeon River rises in the extreme southern portion of Haywood County and against the northern and eastern slopes of the southern end of the Balsam Mountains near their junction with Tennessee Ridge; it flows thence in a northerly course for approximately 20 miles to Canton, thence it flows westerly for a distance of about 10 miles, and then northwesterly about 25 miles to the Tennessee border. The drainage area of Pigeon River above the Tennessee State line is approximately 572 square miles.

At Canton it is to be seen as a rather quiet, placid stream, and it maintains this character to a greater or less degree for a distance of 10 to 15 miles below this point. Lower down, however, and to where it crosses the state line, it becomes a rapid, rushing stream, flowing in a deep, narrow, rock-bound gorge. The total distance from Canton to the Tennessee line, following the windings of the river, is not much short of 50 miles, and in this distance its aggregate fall is approximately 1300 feet, or 26 feet to the mile.

The Nolichucky River is formed by the junction of Toe River and Cane River about 8 or 9 miles east of the Tennessee State line. Toe River is formed by the Union of the North Toe and the South Toe between Sevenmile Ridge and the Burn Mountains. The area drained by the Nolichucky River in North Carolina is 640 square miles located within the limits of Yancey and Mitchell Counties. Both of these counties are preeminently mountainous.

The North Toe River is in the extreme northeastern portion of Mitchell County between Cranberry and Grandfather mountains, and flows thence for a distance of nearly 30 miles in a southerly course. It then flows westerly for a distance of some 15 miles where it is joined by the South Toe River. Here it becomes known as the Toe River and flows north for a distance of 10 miles where it is joined by Cane Creek near Bakersville, and then runs in a deep, rocky channel west-northwesterly for a distance of some 20 miles to where it cuts through the mountains and flows out into the valley of east Tennessee.

The region of the headwaters of the North Toe is very rough, with steep mountain slopes and narrow valleys. Below the mouth of Whiteoak Creek the mountains close in and form a narrow and steep gorge as far down as Horse Creek. There the valley widens out a little, and from there down there is some bottom land under cultivation on each side of the river.

STREAM FLOW

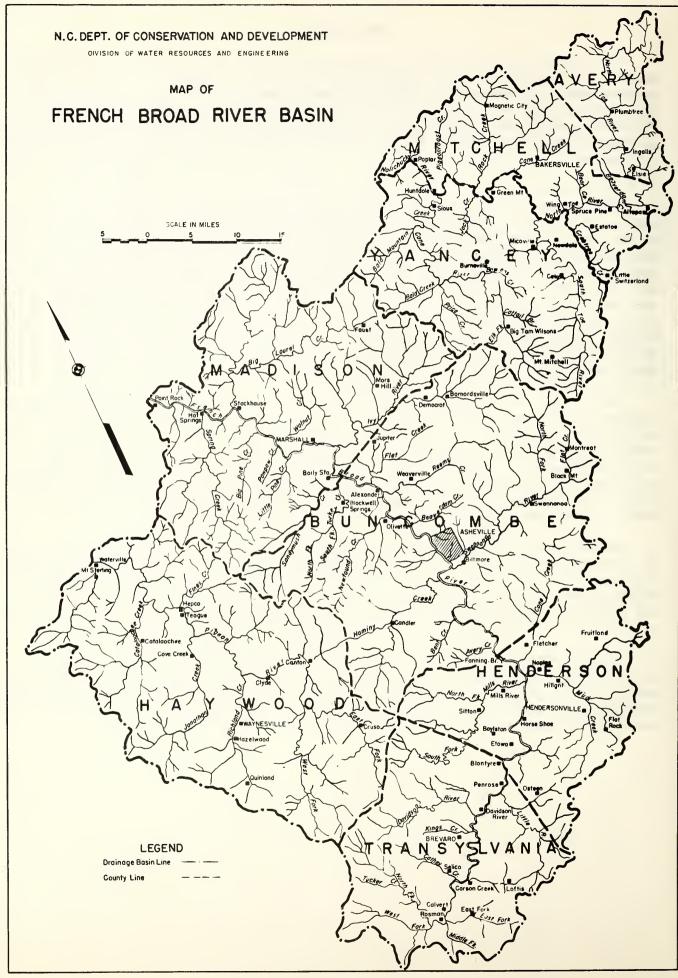
The flow of the French Broad River and its tributaries has been recorded by a total of 46 gaging stations. Only records that have a length of 10 years or more or were active at the end of 1945 are shown in this publication. A chart showing all stations with their period of record can be found on page 8. Records of daily flow for all stations listed can be obtained from the Division of Water Resources and Engineering, Department of Conservation and Development, Raleigh, North Carolina, or from the Surface Water Branch, U. S. Geological Survey, Box 1326, Raleigh, North Carolina.

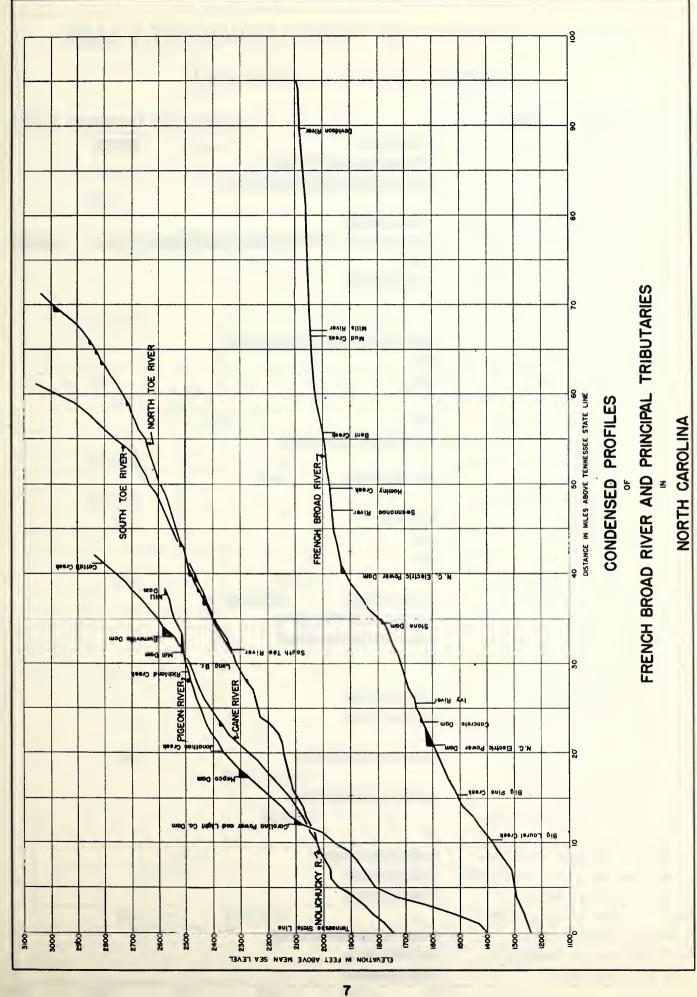
The longest record in the French Broad River Basin is that of the French Broad River at Asheville. This station was established September 2, 1895, as a wire gage located on the upstream side of Bingham School bridge. On December 31, 1901, this station was discontinued to be reestablished on March 16, 1903, by a staff gage on Smith bridge 1-1/2 miles above the old location. This station was operated at this location until September 1922 when it was moved back to Bingham School bridge. Records were obtained by a temporary staff gage a short distance above Smith bridge when the flood of July 1916 destroyed the bridge, gage and bench marks. The new station at Bingham School bridge was a chain gage that was not set at the same datum as the old gage, since the 1916 flood destroyed all bench marks. On August 9, 1930, a waterstage recorder was installed at the same site.

No attempt has been made to include daily discharge records since these are published in the water-supply papers of the U. S. Geological Survey. In place of these daily records, tables of average weekly discharge are shown. Computations of weekly discharge have been made by averaging the daily discharge for consecutive seven-day periods. When leap years intervene the extra day has been included in the eight-day period covering the last of February and the first of March. In every year one eight-day period has been used at the last of December. The seven-day periods used have been the same sevén calendar days for each year.

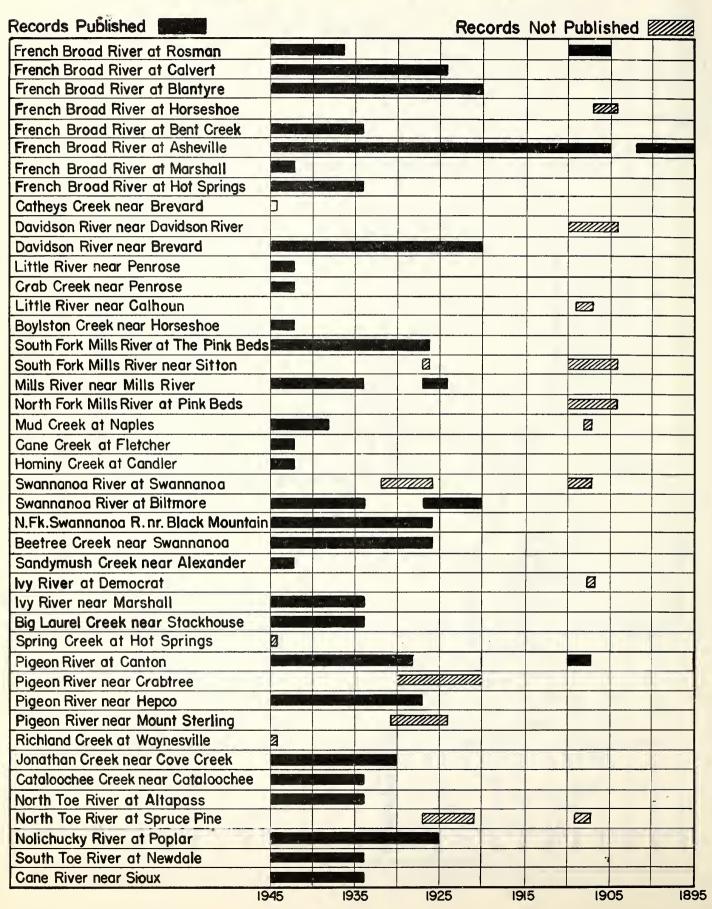
Maximum and minimum daily discharge have been tabulated in separate tables for each month of each year of record. In another table will be found the mean monthly discharge for each year of record. These tables were set up in this form as the records were believed to be more useful when grouped together in individual tables. For example, the minimum daily flow may be easily selected for the station desired by looking under the table for minimum discharge for the station.

During very dry seasons and often during floods a number of miscellaneous measurements are made at points where there are no gaging stations. These measurements are very useful in estimating the flow on the streams that have no established stream gaging stations. A tabulation of all miscellaneous measurements giving their dates and discharge will be found at the end of this section.





GAGING STATIONS IN THE FRENCH BROAD RIVER BASIN SHOWING RECORDS AVAILABLE





French Broad River at Rosman, N. C.

Location (revised).- Water-stage recorder, lat. 35°08'32", long. 82°49'28", at bridge on U. S. Highway 178 at Rosman, Transylvania County, 1.0 mile upstream from East Fork. Datum of gage is 2,173.83 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 67.9 square miles.

Records available .- May 1907 to June 1909, January 1936 to December 1945.

Average discharge. - 10 years (1907-1908, 1936-45), 148 million gallons per day.

Extremes. - Maximum discharge, 6,080 million gallons per day Aug. 30, 1940 (gage height, 11.86 feet), by slope—area method; minimum 15 million gallons per day Jan. 3, 1940 (gage height, 1.51 feet), result of low temperature.

Maximum stage known, 13.9 feet in July 1916, from floodmarks.

Remarks. - Records excellent except those for period of shifting-control, which are good, and those for periods of ice effect, which are fair.

Mean Discharge in Million Gallons per day

	,					50 1	1 2-1		110110				
													Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Mean
1907					106	107	82.0	75.6	108	76.2	148	229	
1908	238	390	254	263	249	170	149	193	122	197	116	199	206
1909	193	313	268	231	356	570	G00 00000		CODOS ESS	Carb carb	-		de es es
	, ,												
1936	304	227	167	352	124	79.5	63.4	76.9	76.9	232	121	194	168
1937	434	282	162	176	136	91.7	69 .8	117	129	213	125	121	171
1938	127	105	133	143	114	134	211	216	123	63.6	95.6	73.6	129
1939	147	419	295	189	140	121	91.7	153	72.4	48.8		46.9	145
1940	59.0	106	125	217	118	91.7	78.8	307	139	67.8	104	136	129
1941	128	86.6	119	149	73.6	59.8	191	118	69.1	54.9	69.1	159	107
1942	134	193	219	126	230	196	140	146	200	105	82.7	278	171
1943	285	244	219	200	205	153	216	118	84.0	65.2	76.2	71.1	161
1944	114	183	265	233	159	98.8	78.8	67.2	65.2	52.2	64.2	80.8	121 .
1945	101	140	149	213	165	90.4	80.1	69.8	114	85.9	109	178	124
Max.	434	419	295	352	356	570	27.6	307	200	232	148	278	206
Min.	59.0		119	126	73.6		63.4		65.2	48.8		46.9	107
Mean	189	224	198	208	167	151	121	138	109	105	96.2		148

French Broad River at Rosman, N. C.

Maximum Discharge in Million Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Max.
1907					1,44	455	194	103	975	103	646	975	en 200 (m)
1908	814	3070	549	1270	501	255	368	756	329	1090	223	917	3070
1909	549	866	866	1030	1650	2700	SED 993-600-679		GEO (NO (NO CEO-	an (2000 an	cm == (m = m =		many cases dress dulls:
1936	924	814	386	1390	180	129	129	216	756	891	229	930	1390
1937	1000	625	203	359	235	162	155	310	302	1430	162	207	1430
1938	299	151	264	242	388	200	956	549	295	78	263	196	956
1939	891	801	574	405	170	195	193	1360	109	79	58	114	1360
1940	272	245	263	639	169	223	152	2530	353	161	298	612	2530
1941	199	132	223	452	112	110	866	200	198	193	275	565	866
1942	253	572	516	162	1540	455	314	253	749	166	116	2090	2090
1943	711	503	426	769	525	352	362	195	295	88	288	315	769
1944	415	425	698	325	251	134	318	135	208	90	228	169	698
1945	266	468	297	594	287	123	153	114	448	448	225	486	594
Max.	1000	3070	866	1390	1650	2700	956	2530	975	1430	646	2090	3070
Min.	199	132	203	162	112	110	129	103	109	78	58	114	594
Mean	549	723	439	636	473	423	332	560	418	401	251	631	1432

Minimum Discharge in Million Gallons per day

	,				DUITALE	,			7110 1001				47
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1907 1908 1909	86 123	123 86	168 168	86 123	86 144 168	86 144 123	71 103	58 86	58 71 ——	58 71	71 86	71 103	71
1936	84	153	116	167	86	55	42	53	42	83	91	91	42
1937	270	209	133	125	98	69	56	65	69	71	94	90	56
1938	98	88	93	105	83	90	70	116	81	58	57	52	52
1939	75	201	179	139	114	81	58	76	56	43	39	36	36
1940	36	45	85	110	84	66	52	48	76	58	72	65	36
1941	99	78	75	94	54	48	72	73	52	44	48	52	44
1942	87	113	133	97	85	124	89	101	96	87	70	94	70
1943	172	155	139	125	135	114	138	79	60	59	57	40	40
1944	71	65	138	183	120	67	57	47	43	40	41	59	40
1945	58	58	102	112	110	65	61	48	47	54	67	90	47
Max.	270	209	179	183	144	144	138	116	96	87	94	103	71
Min.	36	45	75	86	54	48	42	47	42	40	39	36	36
Mean	105	114	127	122	105	87	72	71	63	60	66	70	49

French Broad River at Rosman, N. C.

Mean Weekly Discharge in Million Gallons per day

***			Inco	in wee	J. 1. 1.	1 0 0110	-1 g C .	LII WILL	LIIOII	ua II (7110 PC	er da	y		
Week Endin	g	1907	1908	1909		1936	1937	1938	1939	1940	1941	19և2	19Ь3	1944	1945
Jan.	7		205	260		351	636	133	211	39	167	178	320	165	151
	14		320	151		326	319	115	181	78	109	111	207	97	102
	21		249	232		380	457	103	171	79	131	129	332	130	89
	28		199	156		214	367	156	152	46	116	118	276	83	77
Feb.	4		209	115		260	308	119	674	48	98	135	272	70	63
	11		156	196		235	335	99	629	86	86	192	351	116	68
	18		866	347		236	249	92	764	109	94	251	228	222	147
	25		288	528		187	287	118	449	149	79	189	182	202	234
Mar.	4		292	236		154	203	100	755	140	83	145	151	249	165
	11		205	242		134	174	131	635	115	138	284	158	204	134
	18		218	309		129	161	152	421	119	106	209	209	161	109
	25		340	290		147	152	142	304	95	112	232	296	327	138
Apr.	ī		233	260		283	139	125	323	157	138	187	251	424	207
	8		165	156		617	203	157	286	185	238	146	163	237	189
	15		206	3214		403	172	170	244	191	149	140	143	240	125
	22		249	212		239	134	140	274	309	111	116	287	217	264
	29		431	215		191	202	116	359	200	109	97	213	232	278
May	6		282	314		163	158	104	243	148	89	101	152	191	204
	13	121	287	412		136	148	94	218	134	89	92	267	165	165
	20	106	246	388		121	151	108	196	112	72	353	218	141	188
	27	97	229	301		101	112	95	199	98	60	372	200	147	140
June	3	162	169	534		88	102	201	250	90	56	187	149	143	112
• uno	10	103	205	963		96	111	126	234	81	56	214	133	123	101
	17	91	180	529		85	94	106	182	114	70	273	156	105	93
	24	86	154	463		72	82	166	151	99	55	162	135	79	85
July	1	84	141	196		60	74	112	148	72	61	141	216	72	74
	8	71	250			65	68	85	125	79	314	124	287	83	67
	15	81	135			57	69	85	122	88	217	137	247	98	72
	22	87	112			71	57	313	164	96	162	103	185	74	79
	29	90	118			48	78	366	144	61	114	189	156	60	98
Aug.	5	71	113			89	78	296	152	51	115	149	129	93	95
	12	66	131			75	121	335	143	87	127	138	152	70	83
	19	79	86			72	132	180	477	615	95	147	129	65	64
	26	89	392			67	100	130	213	134	140	176	96	50	61
Sept.		71	213			88		119	165	578	98	111			51
1 - 0	9	69	200			59	192	187	131	198	95	306	77	47	61 51 65
	16	64	99			52	141	175	106	124	62	185	63	72	176
	23	193	86			55	87	98	106	98	56	121	124	66	151
	30	116	92			147	74	85	92	86	59	216	72	78	79
Oct.	7	91	84			112	122	72	59	71	49	126		65	75
·	14	78	159			360	84	65	47	66	47	102	62	53	63
	21	71	86			344	439	61	45	62	49	93	68	52	59
	28	67	351			159	223		45	60	74	104	67	43	149
Nov.	4	110	283			133	155	59 57	46	134	98	92	61	52	78
	11	88	110			129	128	139	43	95	67	85	121	47	73
	18	105	134			140	124	70	41	116	51	76	68	46	125
	25	265	94			103	101	113	48	76	66	83	61	58	146
Dec.	2	127	112			99	132	74	48	86	56	98	58	112	105
	9	105	363			182	130	67	41	69	193	182		89	193
	16	317	135			143	92	62	37	108	107	127	54	76	139
	23	234	158			168	151	54	41	112	143	104		67	109
	31	287	159			292	140	109	63	256	215	685	121	92	282
Maxim			866			617	636	366	494	615	314	685	351	421	282
Minim			84			48	57	54		39	47	76		43	51
***************************************	CALL	L	T	1		40	1 7				41	1	41		

12

Location(revised).- Water-stage recorder, lat. 35°08'55", long. 82°47'59", at town-ship bridge 0.8 mile southeast of railroad station at Calvert, Transylvania County, and 1.4 miles downstream from East Fork. Datum of gage is 2,154.63 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. 103 square miles.

Records available .- October 1924 to December 1945.

Average discharge. - 21 years, 216 million gallons per day.

Extremes.— Maximum discharge, 10,400 million gallons per day Aug. 15, 1928 (gage height, 13.0 feet), from rating curve extended above 2,330 million gallons per day; minimum, 35 million gallons per day Sept. 17-23, 1925; minimum gage height, 0.26 foot Dec. 17, 1943.

Maximum stage known, 18.3 feet in July 1916, from flood-crest reference mark.

Maximum stage known, 18.3 feet in July 1916, from flood-crest reference mark.

Remarks.— Records excellent except those for periods of ice effect or no gage-height record, which are fair.

Mean Discharge in Million Gallons per day

						- 6	111111		1			, , , , , , , , , , , , , , , , , , , ,	
37	To	Thele	3/10	A	Mon	Tourn	Tas 7		C+	00+	Nozz	Dec.	Yearly Mean
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.		
1924				,				,	,	160	110	281	
1925	378	263	183	149	114	84.6	61.6	43.1	42.4	57.2	167	80.1	135
1926	224	265	209	230	120	85.3	89.1	137	130	93.0	222	266	173
1927	207	194	274	189	141	134	113	101	84.0	112	152	302	167
1928	191	194	231	348	324	292	203	542	359	284	194	153	276
1929	254	340	682	330	351	257	208	125	301	348	416	265	323
1930	214	214	213	160	174	114	75.6	56.6	93.0	63.8	137	168	140
1931	202	144	222	389	240	132	112	121	72.4	56.3	63.2	346	175
1932	427	338	259	223	245	259	127	120	100	463	364	452	281
1933	405	326	302	328	321	157	118	111	165	86.6	79.5	96.3	208
1934	187	136	432	226	189	283	165	180	218	290	269	322	242
1935	460	264	275	261	208	141	176	234	146	100	208	152	219
1936	489	366	266	578	199	126	101	113	125	413	198	301	273
1937	660	466	270	287	218	152	114	187	197	351	209	187	274
1938	189	162	207	213	167	198	306	305	187	101	156	128	194
1939	226	591	408	280	229	193	150	259	127	87.9	73.6	76.9	223
1940	95.6		191	293	167	138	120	452	225	119	174	201	196
1941	196	141	186	211	121	101	297	165	103	84.0	107	239	163
1942	204	298	352	201	342	273	229	255	297	163	142	401	264
1943	402	355	337	329	313	241	302	177	129	90.4	110	105	240
1944	174	278	403	355	248	158	123	105	109	89.8	111	132	190
1945	152	211	224	296	236	135	127	108	163	127	156	264	183
Max.	660	591	682	578	351	292	306	542	359	463	416	452	323
Min.	95.6	136	183	149	114	84.6				56.3	63.2	76.9	135
Mean	283	273	292	280	222	174	158	186	161	170	174	224	216

Maximum Discharge in Million Gallons per day

	-				26	-							Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Max.
1924		_									131	1540	
1925	885	629	244	206	127	145	99	55	125	123	963	106	963
1926	1380	698	548	685	160	112	315	410	333	177	749	711	1380
1927	333	429	588	333	390	278	171	278	148	859	1360	588	1360
1928	297	333	548	711	711	588	261	3550	1030	982	518	257	3550
1929	463	1070	2190	463	556	518	392	167	1970	1110	801	463	2190
1930	358	633	724	291	410	156	107	94	474	88	495	762	762
1931	1120	274	762	1710	358	164	209	205	96	123	107	1210	1710
1932	1140	594	808	410	808	636	225	203	241	3360	1030	1710	3360
1933	717	594	963	1050	1470	410	274	177	392	164	112	156	1470
1934	769	562	1680	324	463	633	205	490	1060	891	730	730	1680
1935	2000	424	762	509	286	310	375	937	343	270	1130	399	2000
1936	1490	1160	622	2180	290	187	191	350	1270	1380	365	1450	2180
1937	1440	924	345	514	360	206	282	572	427	2180	288	313	2180
1938	417	238	414	356	480	291	1330	749	412	118	432	322	1330
1939	1230	1120	704	608	284	270	302	2220	180	134	98	184	2220
1940	446	480	373	963	238	275	225	3860	536	263	462	762	3860
1941	280	218	309	523	180	158	1140	242	213	256	363	808	1140
1942	356	904	872	258	2070	529	498	380	1060	240	200	2790	2790
1943	995	672	630	1200	704	621	508	275	452	107	413	465	1200
1944	594	672	1060	491	404	212	213	203	321	154	381	258	1060
1945	401	672	406	736	402	176	226	182	512	564	337	762	762
Max.	2000	1160	2190	2180	2070	636	1330	3860	1970	3360	1360	2790	3860
Min.	280	218	244	206	127	112	99	55	96	88	98	106	762
Mean	815	633	741	691	531	327	359	743	552	645	521	761	1860

Minimum Discharge in Million Gallons per day

			MITITI	ium Dis	Charge	e in Mi	TTTOIL	Gallor	is per	day			
Year	Jan .	Feb.	·Mar 。	Apr.	May	June	July	Aug	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1924	0 3410	1000	21	11010	ina.j	Ocaro	0 0.1.	*****	DOPUT	118	99	99	2110
1925	182	194	151	127	96	65	47	38	35	39	52	58	35
1926	90	141	136	160	96	67	52	86	77	74	74	138	52
1927	160	141	182	151	103	99	89	72	63	57	70	99	57
1928	145	145	151	197	244	191	158	158	191	149	154	131	131
1929	140	185	358	257	257	180	154	98	93	177	274	225	93
1930	182	154	140	127	121	88	63	43	43	54_	54	93	43
1931	120	101	140	225	167	99	83	90	57	47	50	68	47
1932	241	225	182	164	180	154	94	83	70	99	241	203	70
1933	274	225	225	197	191	120	85	80	87	75	67	68	67
1934	103	80	203	182	151	162	123	120	120	164	174	238	80
1935	275	218	205	200	162	103	99	109	99	82	88	116	82
1936	129	244	185	278	138	87	65	78	64	162	142	145	64
1937	402	359	208	196	167	111	90	112	112	108	162	147	90
1938	142	138	145	156	127	140	105	167	118	92	90	93	90
1939	123	329	268	208	180	132	105	125	101	76	66	61	61
1940	58	78	141	154	129	102	86	77	136	102	118	107	58
1941	161	127	120	154	95	78	129	112	80	67	78	82	67
1942	146	176	212	158	137	192	141	184	163	140	122	149	122
1943	252	240	218	215	230	178	200	122	94	81	83	61	61
1944	113	105	221	284	198	111	87	75	71	71	74	97	71
1945	90	84	162	169	159	100	93	72	66	84	95	132	66
Max.	402	359	358	284	257	192	200	184	191	177	274	238	131
Min.	58	78	120	127	95	65	47	38	35	39	50	58	35
Mean	168	176	188	189	158	122	102	100	92	96	110	119	72

Mean Weekly Discharge in Million Gallons per day

TATO -1-	· ·			11		01141 60	1	llion		s per	i i			
Week Endin		1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Jan.	7 7	1724	255	141	272	258	262	221	332	503	550	292	337	547
	1			109	209	186	275	207	208	552	450	221	820	
	14		396											508
	21		545	433	183	158	236	243	167	366	333	143	335	622
	28		364	207	169	171	250	201	134	269	342	124	419	369
Feb.	4		256	292	172	159	209	253	120	473	271	132	273	405
	11		280	207	145	187	404	263	133	32lı	379	109	238	391
	18		329	172	213	194	247	189	145	291	295	110	323	378
	25		213	341	239	220	286	166	150	375	365	86	243	313
Mar.	4		194	264	198	247	618	151	199	233	248	730	226	251
	11		171	279	343	240	569	300	207	227	382	448	227	216
	18		163	202	340	231	1070	205	166	193	262	236	427	208
	25		212	173	242	215	659	209	166	284	349	235	-251	231
Apr.	1		182	190	208	276	472	169	395	375	245	461	225	432
1 -	8		169	258	174	304	362	191	448	284	281	234	255	1010
	15		161	308	167	397	331	161	260	210	275	202	245	672
	22		142	196	220	293	291	158	451	180	505	267	276	391
	29		127	169	193	417	328	133	397	176	274	196	273	315
May	6		123	148	154	287	399	125	284	344	517	188	207	269
	13		117	130	138	421	339	183	298	193	356	160	209	225
	20		118	116	122	266	362	247	218	219	245	240	247	189
	27		109	103	110	350	315	162	203	258	220	179	197	158
June	3		95	96	178	309	305	123	168	190	195	172	181	138
				87					143	210	156		162	150
	10		88		117	362	255	134				396		130
	17		98	85	133	318	220	119	138	416	135	270	140	134
	24		78	88	173	228	217	105	123	260	165	302	121	116
July	1		68	79	112	249	323	96	106	175	158	198	107	95
	8		72	134	96	213	203	87	122	180	115	189	118	107
	15		71	69	115	236	2 20	72	112	121	109	183	122	91
	22		56	58	123	181	209	76	125	112	139	146	246	114
	29		51	58	118	185	199	64	96	99	109	142	235	75 135
Aug.	5		47	252	105	193	158	65	96	134	118	133	132	135
	12		45	1114	105	244	138	55	127	132	109	141	125	107
	19		45	109	105	邓00	122	53	138	128	118	180	212	94
	26		. 39	122	78	380	114	66	132	105	95	243	461	103 136
Sept.	2		39	98	116	341	99	47	93		125	189	195	136
	9		38	153	101	627	137	49	85	95	282	147	209	96
	16		40	174	90	343	213	144	70	76	180	202	144	90
	23		35	109	74	262	232	109	65	77	115	214	121	83
	30		57	98	66	207	685	83	67	157	94	326	106	242
Oct.	7	240	747	90	61	182	576	64	54	160	89	349	94	207
	14	157	43	90	222	160	269	71	57	119	77	432	91	685
	21	133	65	92	101	419	267	60	53	1180	102	247	91	569
	28	126	74	100	79	399	310	55	49	344	83	184	97	278
Nov.	4	124	83	85	80	210	439	65	67	559	81	280	121	229
	11	113	116	192	75	178	358	58	51	317	91	254	125	213
	18	105	404	298	306	162	514	281	51	261	73	191	433	231
	25	112	92	242	148	260	355	134	84	435	77	247	152	164
Dec.	2	103	74	225	148	168	337	112	76	310	70	432	173	152
	9	508	82	154	388	151	284	267	317	218	103	390	139	282
1	16	250	90	209	335	162	238	138	457	368	81	276	207	212
	23	163	77	179	269	159	272	119	332	336	102	280	144	282
	31	256	74	515	239	136	239	165	354	885	105	263	123	446
Maxim			545	515	388	1400	1070	300	457	1180	550	730	820	1010
Minim			35	58	61	136	99	47	49	76	70	86	91	75
							1 //	1 41	1 +/					

Mean Weekly Discharge in Million Gallons per day (continued)

1	MCall	Weekly	D 10011	arge T	11 1/11	TOIT da.	110113	per da	y (COII
Week Ending	1937	1938	1939	1940	1941	1942	1943	1944	1945
Jan. 7	950	202	197	64	237	269	436	244	224
14	476	172	185	127	172	173	298	145	159
21	704	151	180	121	200	197	470	199	134
28	575	228	164	76	186	176	397	134	116
Feb. 4	486	182	641	80	157	198	391	115	96
11	538	154	616	140	141	291	490	177	104
18	420	145	652	184	154	398	337	344	225
25	484	181	404	269	130	296	276	313	344
Mar. 4	348	154	672	213	130	229	235	363	255
11	297	204	528	178	205	443	248	308	204
18	271	244	378	183	171	351	328	260	169
25	251	218	294	151	177	378	451	473	220
	217	192	309	233	222	297	381	627	287
Apr. 1	337	239	283	246	307	231	272	364	259
	282			240	207	220	245	357	182
15		250	240						183
22	224	201	250	424	167	183	463	331	348
29	318	171	343	276	172	168	348	357	398
May 6	259	158	256	206	139	162	258	299	294
13	236	145	2/10	183	142	147	380	260	236
20	234	160	211	154	116	514	329	227	266
27	178	140	197	147	105	548	312	225	202
June 3	168	267	260	130	102	275	241	216	163
10	169	183	227	132	100	302	214	190	152
17	169	168	192	165	109	338	228	166	138
24	140	245	158	146	90	236	215	134	126
July 1	118	163	169	112	107	221	344	120	111
8	114	127.	141	114	436	199	401	134	106
15	111	130	136	134	361	199	335	149	114
22	94	450	166	149	273	166	258	114	127
29	129	523	146	96	178	334	223	91	151
Aug. 5	132	401	150	82	172	276	183	139	151
12	167	461	160	126	174	244	212	104	127
19	245	264	505	969	138	245	209	105	98
26	155	193	256	192	183	297	149	79	93 77
Sept. 2	260	191	181	795	146	211	126	109	11
9	282	294	147	307	133	427	117	78	98
16	216	192	120	205	98	278	99	116	231
23	140	141	121	164	85	196	193	113	226
30	121	127	107	153	92	311	112	127	123
Oct. 7	205	111	105	129	78	196	90	112	115
14	138	100	89	118	73	160	89	90	98
21	704	99	85	108	76	148	92	88	92
28	486	96	78	104	106	160	90	78	205
Nov. 4	260	94	76	219	143	149	90	90	114
11	208	225	72	147	109	147	172	83	105
18	208	121	70	198	81	135	100	79	174
25	171	181	79	141	99	1/10	90	99	213
Dec. 2	227	123	77	151	85	162	84	194	151
9	169	118	67	123	291	272	87	146	293
16	149	111	63	162	171	196	78	120	202
23	220	97	68	167	207	163	70	109	157
31	207	183	103	349	319	943	182	147	417
Maximum	950	523	672	969	436	943	490	627	417
Minimum	94	94	63	64	73	135	70	78	77

Location(revised).- Water-stage recorder, lat. 35°17°56", long. 82°37°27", at high-way bridge, 700 feet east of Blantyre railroad station, Transylvania County, and 3.4 miles downstream from Little River. Datum of gage is 2,060.32 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 296 square miles.

Records available. - December 1920 to December 1945.

Average discharge. 25 years (1921-45), 592 million gallons per day.

Extremes. Maximum discharge, 17,100 million gallons per day Aug. 16, 1928 (gage height, 22.9 feet), from rating curve extended above 7,430 million gallons per day; minimum, 92 million gallons per day Sept. 21, 1925 (gage height, 1.83 feet).

Maximum stage known, 27.1 feet in July 1916, from floodmarks.

Remarks. - Diurnal fluctuation at low flow caused by power plant above station.

Mean Discharge in Million Gallons per day

					charge			UGLION	F				
V	Ton	Dala	Man		1/	Т	T7	A	C - 1	0-4	37	D	Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean_
1921	775	1014	583	743	730	583	570	616	463	380	522	645	635
1922	788	891	1331	1092	1124	795	627	348	233	256	183	432	675
1923	520	604	801	678	1111	904	477	439	441	271	412	652	609
1924	1066	749	827	1079	672	505	801	410	613	464	304	665	678
1925	1085	624	515	408	326	232	187	123	121	180	374	249	369
1926	600	652	574	618	320	228	264	365	419	251	566	652	459
1927	509	500	704	490	342	320	388	260	222	288	344	795	430
1928	504	550	614	866	904	749	618	1460	1034	691	470	380	736
1929	621	833	1925	775	833	659	492	317	866	1092	1066	691	846
1930	547	5 54	545	406	510	313	236	183	341	189	374	519	392
1931	509	376	610	988	619	342	275	340	194	158	163	840	452
1932	1150	743	659	554	659	672	376	461	262	1182	1066	1382	763
1933	1105	917	762	943	898	466	380	399	554	286	257	300	606
1934	558	447	1163	665	548	840	457	506	627	802	645	753	669
1935	1214	705	724	676	563	379	443	626	410	241	614	435	585
1936	1429	1025	776	1621	549	345	269	282	249	1091	483	744	738
1937	1798	1154	669	739	573	415	313	527	561	993	547	479	736
1938	503	448	594	561	437	554	696	711	432	245	401	336	494
1939	601	1621	1121	713	568	458	349	682	293	202	176	194	575
1940	265	523	475	760	425	353	324	1443	650	290	429	529	539
1941	513	362	501	532	296	235	702	388	224	181	249	604	401
1942	513	797	947	506	1088	633	609	685	819	416	359	1145	711
1943	1136	963	929	857	861	672	864	468	323	240	292	279	656
1944	507	764	1141	966	694	463	313	282	2 95	258	348	398	535
1945	430	621	643	769	582	317	353	359	495	344	415	797	510
Max.	1798	1621	1925	1621	1124	904	864	1460	1034	1182	1066	1382	846
Min.	265	362	475	406	296	228	187	123	121	158	163	194	369
Mean	770	737	805	760	649	497	455	507	446	440	442	596	592

Maximum Discharge in Million Gallons per day

													Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		Nov.	Dec.	Max.
1921	1650	2990	736	2530	1550	795	924	969	969	1450	988	1800	2990
1922	2330	1920	3040	2430	2610	1350	1100	470	297	601	202	1500	3040
1923	1770	1160	3070	2080	3340	2500	924	717	1470	562	1520	1770	3340
1924	2890	1600	1440	2570	988	730	2130	730	2170	1100	488	2730	2890
1925	2390	814	1050	<u>558</u>	523	308	308	156	265	593	1800	404	2390
1926	3200	1330	1240	1550	388	339	1160	756	1120	339	214	2030	3200
1927	879	904	1410	1070	488	488	840	488	421	1260	1330	1600	1600
1928	943	1080	1010	1350	1900	1230	1270	11,560	2890	1560	879	486	11,560
1929	1500	2760	8400	1010	1250	1630	609	520	3230	3350	1860	982	8400
1930	724	1300	1630	609	1030	404	331	273	1340	223	1360	2140	2140
1931	1440	581	1840	2340	1190	420	373	503	287	388	307	2420	2420
1932	2440	1120	1940	1290	1940	1610	627	937	685	7690	2910	3440	7690
1933	2420	1980	1190	2560	2360	982	632	859	1170	853	481	641	2560
1934	1680	2080	3770	898	956	2020	619	1050	2000	1920	1490	2330	3770
1935	4260	1170	1960	1380	743	614	943	2110	975	724	3090	1110	4260
1936	3680	2510	2130	4810	801	510	672	472	1560	3840	814	2310	4810
1937	3990	2040	853	1320	1060	548	769	1210	17450	5570	730	788	5570
1938	1110	646	1100	937	1270	833	2380	1370	872	315	820	1090	2380
1939	2200	2640	2520	1430	704	685	756	3910	435	299	246	397	3910
1940	1050	1740	808	2490	598	859	598	11,820	3260	554	1220	1860	11,820
1941	711	485	885	1370	495	389	27/10	599	334	543	559	2040	2140
1942	969	2650	2860	685	665	1070	1710	975	2580	588	517	8200	8200
1943	2620	2050	2000	2420	1900	1640	1610	743	736	364	846	975	2620
1944	1390	1810	2670	1430	1120	827	435	535	885	535	1060	788	2670
1945	827	1810	1460	1330	911	390	581	885	1870	917	988	1940	1940
Max.	4260	2990	8400	4810	3340	2500	2380	11,820	3260	7690	3090	8200	11,820
Min.	711	485	736	558	388	308	308	156	265	223	202	404	1600
Mean	1960	1650	2040	1700	1230	927	978	1780	1330	1450	1070	1830	4330

Minimum Discharge in Million Gallons per day

									P 02 U				Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Min.
1921	543	581	506	416	506	434	416	452	313	255	345	380	255
1922	452	659	795	756	717	562	488	255	190	178	154	190	154
1923	313	398	398	488	488	506	345	283	283	228	228	434	228
1924	525	523	633	594	523	388	404	280	240	324	266	240	240
1925	523	505	404	324	266	179	136_	103	93	111	179	179	93
1926	203	388	388	404	253	179	156	240	253	215	215	339	156
1927	388	355	488	371	253	240	215	191	156	160	182	343	156
1928	358	406	406	545	640	491	474	582	537	404	404	329	329
1929	359	469	898	609	627	436	389	247	235	520	724	572	235
1930	469	404	373	344	329	247	200	146	146	167	156	273	146
1931	329	300	355	555	404	260	235	235	156	130	130	200	130
1932	609	572	452	375	439	389	273	247	194	273	665	572	194
1933	724	665	609	555	590	344	300	280	278	229	211	211	211
1934	293	287	555	537	420	469	344	336	373	452	436	520	287
1935	609	590	537	503	436	280	280	280	. 253	198	225	320	198
1936	351	685	510	743	351	225	184	178	142	339	348	348	142
1937	995	872	528	491	455	280	215	339	302	295	413	348	215
1938	348	371	388	388	324	380	280	380	280	182	202	216	182
1939	346	879	685	537	468	322	218	307	216	166	149	143	143
1940	155	194	309	404	325	249	214	187	309	221	289	260	155

Minimum Discharge in Million Gallons per day (continued)

Y	(ear	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1111	1941	413	296	296	365	219	168	282	253	171	138	171	182	138
	1942	356	469	556	372	342	452	372	503	419	345	308	399	308
	1943	606	588	552	526	592	469	503	313	200	186	186	158	158
	1944	328	254	605	769	552	300	222	180	174	180	216	297	174
	1945	291	239	435	451	376	233	233	217	205	200	264	376	200
M	Max.	995	879	898	769	717	562	503	582	537	520	724	572	329
	Min.	155	194	296	324	219	168	136	103	93	111	130	143	93
	Mean	354	780	506	497	436	339	295	281	245	244	283	313	193

Mean Weekly Discharge in Million Gallons per day

787 1 -				MCGII	iiccn1)	DISCIN	- 0		LOII GG		por da	<u>′</u>		
Week Endin	g	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
Jan.	7		634	468	820	698	814	324	691	609	620	573	736	1470
oun.	14		898	749	386	1340	1070	255	499	528	698	532	564	1460
}	21		963	879	331	1530	1630	1270	443	437	570	596	441	975
	28		645	1120	469	859	982	609	418	478	614	505	367	685
Feb.	· 4		642	743	612	672	691	685	440	435	528	576	325	1080
	11		1280	820	756	762	659	578	376	520	846	730	324	730
	18		1010	1180	691	550	665	423	518	544	659	503	411	672
	25		1090	795	437	917	571	736	627	636	736	441	385	749
Mar.	4		698	1040	463	872	503	711	543	514	1730	398	627	582
	11		595	1290	495	1020	468	736	898	610	1520	808	552	581
	18		533	1290	1340	685	487	586	853	646	3110	506	429	483
	25		599	969	956	853	644	468	611	588	1660	508	436	762
Apr.	1		577	1850	596	698	461	519	530	711	1160	425	1090	975
	8		501	1490	601	975	457	645	450	678	853	469	1240	730
	15		510	1060	911	1000	433	853	426	963	782	407	691	518
	22		1160	975	698	1520	383	552	565	749	691	402	820	411
	29		814	808	543	872	362	444	523	1090	756	354	1150	415
May	6		620	1410	724	840	324	383	419	788	950	346	685	995
	13		621	1010	678	736	317	302	360	1240	866	592	827	508
	20		685	1160	950	623	382	322	302	698	782	704	565	541
	27		1040	1030	1110	569	313	270	298	1000	749	461	517	672
June	3		587	956	2330	595	262	253	345	756	730	346	421	499
	10		557	891	1110	536	244	227	289	866	633	359	360	416
	17		563	678	775	582	232	201	313	788	574	321	370	1150
F7	24		574	859	652	435	236	263	386	<u>599</u>	537 891	291	326 279	704
July	1		659 481	573 632	612 543	438 1220	203	210	279 244	711 585	532	272	282	473
	15		545	555	447	1070	209	202	448	659	516	222	275	349
	22		730	665	552	556	169	166	578	504	489	239	272	340
	29		539	685	386	514	151	243	329	621	436	241	276	315
Aug.	5		574	460	462	506	133	698	263	730	402	208	260	646
nug.	12		599	378	505	416	134	319	271	743	346	189	339	561
	19		665	362	424	422	127	297	286	3440	315	173	373	435
	26		672	302	359	384	115	352	210	1120	281	194	423	281
Sept.			494	265	397	300	110	286	296	969	251	152	246	262
	9		393	247	402	289	110	481	283	1910	469	. 182	234	307
	16		358	240	362	267	109	618	228	937	561	539	189	219
	23		483	213	617	711	101	323	184	724	866	398	176	276
	30		623	224	414	1280_	165	288	158	568	1760	302	165	402
Oct.	7		473	224	285	704	124	272	165	508	1950	198	143	482
	14		331	346	249	435	121	245	539	489	704	205	161	334
	21		291	258	310	369	199	254	280	950	659	179	143	3120
	28		265	221	247	390	275	245	209	872	1200	170	134	917
Nov.	4		611	200	362	351	214	234	204	532	1080	180	207	1470
	11		417	187	596	308	284	335	196	462	950	176	144	943
	18		487	185	304	288	749	853	503	409	1310	704	136	730
-	25		659	178	297	319	269	641	443	557	943	433	214	1180
Dec.	2		581	178	476	268	227	593	325	418	820	294	172	846 628
	9	7500	659	222	859	1050	271	393	1170	378	762	846	641	1120
	16	1500	429	311	572	788	233	526	820	383 405	622	413	1310	956
	23	879	853	749	685 545	447	271 233	440 1220	736 592	346	633	541	691	2810
Maxim	31	975	631	1350	2330	524 1530	1630	1270	1170	3440	3110	846	1310	3120
Minim			265	178	247	267	101	166	158	346	251	152	134	219
MITITI	CUII		200	1 10	241	201	101	1 100	170	740	1 -71	1 2/2	1 1/4	

French Broad River at Blantyre, N. C.

Mean Weekly Discharge in Million Gallons per day (continued)

Week						25011-2	Ī	I					· · · · ·	
Endin	₀	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Jan.	5 7	1670	685	775	1580	2930	529	502	172	638	678	1340	717	590
oan .	14	1190	833	2290	1470	1220	457	510	292	448	439	749	424	453
P. Company	21	872	444	872	1910	1760	396	516	428	522	497	1300	577	384
	28	853	376	1120	1050	1490	626	440	193	479	471	1090	383	345
Feb.	1	724	373	724	943	1250	505	1650	205	405	508	1100	316	277
reb.	4	1050	347	625	1290	1290	421	1690	371	362	743	1430	439	286
	11													659
	18	885	325	879	1050	1040	389	1960	495	391	1090	911	995	
7.	25	1020	321	646	879	1200	506	1070	885	333	808	704	872	1070
Mar.	-4	698	1640	599	70l1	859	432	1880	553	316	584	598	975	730
	11	840	1690	596	607	730	574	1460	476	556	1330	640	872	595
	18	704	652	1150	599	672	704	1030	457	477	904	879	717	464
	25	904	659	652	685	626	638	762	376	465	963	1370	1450	633
Apr.	1	652	1190	581	1290	542	542	762	548	612	769	1010	1790	840
	8	736	652	659	2850	820	621	724	576	775	589	698	995	717
	15	672	640	652	1960	769	685	622	672	540	554	616	963	496
	22	1580	762	704	1050	581	528	618	1090	423	455	1230	898	827
	29	853	603	711	846	814	437	872	743	413	413	904	963	1040
May	-6	1130	555	537	724	659	394	644	533	343	410	672	788	756
	13	1090	455	561	618	557	355	579	467	360	372	950	717	572
	20	743	711	659	543	652	423	517	388	288	1150	937	685	672
	27	756	508	565	437	488	359	515	373	242	2480	943	652	477
June	3	592	527	464	368	494	788	633	326	231	756	678	627	389
omie	10	459	1200	437	400	458	550	553	298		659	580	576	349
										233			483	247
	17	416	859	388	379	450	474	146	430	255	795	678		323
	24	443	827	337	320	397	588	386	410	213	5 5 2	548	381	304
July	j	522	556	293	262	307	492	370	291	247	489	1000	310	261
	_ 8	373	506	332	268	307	336	330	269	924	479	1170	351	273
	15	331	507	339	241	299	327	339	362	879	488	1010	359	300
	22	439	432	593	306	253	769	324	429	724	413	704	302	322
	29	366	384	549	205	318	1360	321	273	426	1040	595	239	473
Aug.	5	401	364	338	399	428	930	438	211	418	672	500	387	557
	12	304	399	322	287	439	1050	423	260	410	685	536	306	409
	19	439	473	509	232	736	652	1210	3710	299	724	579	269	338
	26	355	672	1320	246	461	451	820	536	462	782	378	210	281
Sept.	2	528	585	517	291	704	435	428	2410	328	542	318	273	233
	9	911	506	630	229	814	618	348	808	281	1260	302	212	276
	16	630	545	415	218	630	456	277	523	220	769	260	310	561
	23	388	622	317	195	381	343	280	410	185	521	425	300	853
	30	298	879	269	357	315	321	227	371	195	801	311	336	364
Oct.	7	299	1000	227	567	539	290	252	314	171	510	255	349	346
	14	242	1180	216	1630	375	249	205	290	151	414	234	244	288
	21	364	665	216	1790	2010	236	184	259	158	377	240	247	242
	28	259	508	216	633	1090	224	175	253	220	402	235	217	505
Nov.	4	244	613	328	466	736	204	179	555	343	373	227	324	311
11000	11	328	638	324	526		557	169	フノノ		366	439	264	274
	18					559			355	241				
		236	479	1360	613	551	304	165	492	186	343	307	240	432
Des	25	240	627	446	413	437	484	193	329	242	357	230	306	590
Dec.	2	216	1150	482	361	554	342	185	365	207	426	200	577	429
	9	285	911	368	698	427	279	174	297	769	874	240	446	885
	16	249	596	614	570	370	287	160	351	426	554	196	403	580
	23	365	620	426	814	532	245	165	506	419	435	191	342	747474
	31	326	575	346	969	570	514	264	963	885	2710	486	382	1320
Maxim		1670	1690	2290	2850	2930	1360	1960	3710	924	2710	1430	1790	1320
Minim	um	216	321	216	195	253	204	160	172	151	343	191	210	233
									·					

French Broad River at Bent Creek, N. C.

Location(revised).- Water-stage recorder, lat. 35°30°07", long. 82°35'35", 50 feet downstream from Bent Creek, 6 miles upstream from Hominy Creek, and 7 miles south of Asheville, Buncombe County. Datum of gage is 1,995.95 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 676 square miles.

Records available .- May 1934 to December 1945.

Average discharge. - 11 years, 1,015 million gallons per day

Extremes. - Maximum discharge, 15,200 million gallons per day Aug. 14, 1940 (gage height, 12.6 feet); minimum, 229 million gallons per day Oct. 13, 1941 (gage height, 2.22 feet).

Maximum stage known, about 27.3 feet July 15, 1916, from floodmarks. Flood of August 1928 reached a stage of about 16.1 feet, from floodmarks.

Remarks. - Diurnal fluctuation at low flow caused by power plant above station.

Mean Discharge in Million Gallons per day

			MCan	DISCHA	rge In	. 1914-1-1-	OII GGI	10115 P	ci day				
													Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean
1934					982	1428	820	840	995	1276	1003	1268	
1935	2155	1209	1278	1198	987	686	793	939	694	415	1067	735	1012
1936	2589	1780	1573	2973	1015	656	560	658	505	2034	851	1352	1378
1937	3309	2014	1187	1309	1034	813	622	858	1022	1651	907	834	1294
1938	890	782	1089	953	776	932	1240	1027	692	384	649	567	833
1939	1004	2726	19 1 5	1156	977	840	638	1135	503	338	305	348	979
1940	465	887	780	1218	685	585	578	2375	1269	_536	703	922	917
1941	849	590	828	896	505	408	1209	761	379	306	430	973	680
1942	862	1355	1636	852	1929	1056	919	1052	1304	710	614	1680	1165
1943	2042	1613	1 593	1433	1351	1177	1582	824	554	421	516	477	1130
1944	866	1300	1949	1606	1107	780	532	443	472	497	533	612	890
1945	708	1067	1067	1197	933	545	658	637	1030	638	737_	1416	884
Max.	3309	2726	1949	2973	1929	1428	1582	2375	1304	2034	1067	1680	1378
Min.	465	590	780	852	505	408	532	443	379	306	305	348	680
Mean	1431	1393	1354	1345	1023	826	846	962	785	767	693	932	1015

French Broad River at Bent Creek, N. C.

Maximum Discharge in Million Gallons per day

Year	Jan.	Feb 。	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Max.
1934					1540	3610	1190	1590	2980	3170	2390	3900	and color case also case
1935	7430	2340	3900	3040	1400	1030	1790	3030	1720	937	5050	1600	7430
1936	6720	4280	4760	7820	1410	988	1450	956	2450	6380	1460	3940	7820
1937	7360	3550	1510	2430	1740	1160	1510	1610	2820	7170	1160	1160	7360
1938	1940	1110	2120	1/160	2160	1410	3940	1890	1180	515	1370	1890	3940
1939	3680	4680	4480	2000	1110	1540	1070	4350	717	531	382	685	4680
1940	1890	3050	1240	3680		1210	1230	13,760	6650	833	1940	3550	13,760
1941	1250	846	1470	2290			3050			904	1050	2940	3050
1942	1450	4090	4940	1090	11,690	2020	2020	2020	3810	969	801	9370	11,690
1943	5280	3220	3700	3700	2890	3510	2700		1250	603	1470	1430	5280
1944	2320	3100	4590	2760	'	1250	801	898	1370	1160	1600	969	4590
1945	1370	3140	2800	2120	1510	691	1030	1550	3620	1470	1470	3330	3620
Max.	7430	4680	4940	7820	11,690	3610	3940	13,760		7170	5050	9370	13,760
Min.	1250	846	1240	1090	820	691	801	898		515	382	685	3050
Mean	3699	3037	3228	2947	2407	1592	1815	2848	2428	2053	1679	2897	6656

Minimum Discharge in Million Gallons per day

						0 -							Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Min.
1934					749	891	610	616	598	711	711	859	
1935	1030	988	917	853	775	500	488	474	424	350	384	581	350
1936	581	1160	911	1320	685	448	364	420	317	665	659	659	317
1937	1740	1510	950	904	827	552	448	597	545	530	730	678	448
1938	659	659	711	724	604	646	470	589	427	317	317	384	317
1939	574	1370	1110	898	846	574	399	567	377	278	278	278	278
1940	297	355	562	691	523	413	376	362	588	439	508	456	297
1941	678	490	496	623	375	292	424	459	297	234	295	323	234
1942	643	782	995	652	601	749	588	743	685	601	528	672	528
1943	1030	1060	975	963	975	808	885	587	388	342	359	309	309
1944	562	466	963	1250	891	504	375	300	300	340	372	501	300
1945	501	416	.698	730	632	404	422	355	360	404	497	672	355
Max.	1740	1510	1110	1320	975	891	885	743	685	711	730	859	528
Min.	297	355	496	623	375	292	364	300	297	234	278	278	234
Mean	754	841	844	873	707	565	487	506	442	434	470	531	339

French Broad River at Bent Creek, N. C.

Mean Weekly Discharge in Million Gallons per day

787 - 1			T	110011	меект	<i>y</i> 2 100	1101 50	711 277	11011 0	CTTOIID	1001 0	ay .	,
Week		7021	ם מסר	7026	7027	7020	7020	7010	12017	7.01.0	7012	7.01.1	اءماحا
Endir		1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Jan.	7		1290	2880	5450	930	846	3150	1100	1100	2450	1220	937
	1/4		4260	2580	2160	840	866	4610	749	743	1210	711	762
	21		1440	3530	3240	724	879	782	853	840	2330	1010	646
	28		2000	1920	2800	1070	717	3440	762	775	1950	652	576
Feb.	4		1200	1560	2280	879	2620	3690	652	872	2000	541	470
	11		1020	2290	2270	730	2870	6300	579	1230	2310	749	489
	18		1590	1910	1820	678	3500	820	646	1770	1560	1630	1160
	25		1100	1460	2030	879	1690	1540	543	1460	1210	1520	1820
Mar.	4		1010	1200	1490	769	3370	891	539	1030	1050	1650	1180
	ıi	İ	1010	1040	1290	1100	2580	788	924	2550	1100	1430	988
	18		2150	1140	1190	1290	1620	749	795	1520	1420	1120	743
	25		1100	1450	1110	1170	1230	652	736	1540	2450	2530	995
Apr.	1		1000	2910	988	969	1210	866	1030	1210	1710	3240	1500
1	8		1090	5250	1370	1030	1180	879	1290	969	1200	1630	1130
	15		1050	3750	1330	1120	1030	1090	898	930	1080	1600	788
	22		1400	1830	1030	911	1030	1740	717	782	2000	1460	1290
	29		1310	1490	1550	788	1380	1230	724	711	1490	1600	1560
May	6		937	1290	1180	711	1050	866	585	782	1120	1270	1210
	13		975	1160	1010	645	988	762	607	659	1510	1160	891
	20		1180	1010	1150	749	924	627	483	1760	1440	1050	1090
	27	846	982	820	898	665	911	590	429	4690	1420	1050	782
June	3	937	795	691	950	1340	1160	528	410	1220	1090	982	634
0 0410	10		795	756	885	911	1050	480	395	1050	982	956	594
	17	1500	711	724	898	801	795	724	498	1370	1140	808	556
	24	1460	625	605	775	1030	678	691	326	937	904	704	548
July	1	930	532	515	584	795	643	463	401	820	1970	528	441
o ary	8	917	624	623	595	576	631	450	1330	801	2160	577	574
	15	879	640	508	579	565	588	652	1590	788	2000	621	614
	22	749	1080	579	530	1490	561	788	1420	646	1200	540	612
	29	698	917	416	620	2350	685	496	769	1410	982	408	762
Aug.	5	801	586	891	827	1440	724	414	853	1010	885	609	975
rug .	12	736	541	756	730	1490	820	453	775	1020	950	468	717
	19	775	652	585	1090	924	1650	5830	552	1250	995	430	601
	26	969	1980	503	782	685	1580	872	950	1110	672	337	540
Sent		930	775	598	1150	640	724	463	558	827	594	419	412
Sept	9	898	1060	519	1540	982	590	1490	461	2020	537	. 349	636
	16	820	704	423	1130	724	477	943	378	1270	467	481	988
	23	943	548	427	691	548	477	756	324	827	685	494	1930
		1360	468	659	581	508	397	678	326	1230	531	526	730
Oct.	7		397	1170	879	446	428	585	284	840	435	592	672
0000			373	2970	632	390	336	532	249	698	401	405	557
	21		366	3330	3090	369	313	495	269	636	426	594	470
	28	795	383	1140		359	295	495	359	698	428	461	879
Norr	20	898	553	853	2130 1210	324			599	672	419	492	575
Nov.	11					891	295	943 582	425	614	756	424	517
	18	762	537 2460	930 1030	917 911	499	295 287	782		590	531	388	717
	25	982	775		762	795	333	556	327 406	603	418	473	1030
Doc	2	1940	769	736 678		557	315	602	368	691	380	866	775
Dec.					930			510				659	
	9	1520	624	1320	769	464	314		1190	1300	416		1630
	16	982	1000	1070	691	483	295	579	704	924	364	634	1020
	23		736	1500	859	421	313	879	652	724	349	534	769
Mossi	31	950	604	1670	988	872	461	1710	1470	3690	769	593	2320
Maxim			4260	5250	5450	2350	3500	6300 414	1590	4690	2450	3240	2320
Minir	num		366	416	530	324	287	414	249	590	349	337	412

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French Broad River at Asheville, N. C.

Location(revised).- Water-stage recorder, lat.35°36°32", long. 82°34°41", at Pearson (formerly called Bingham School) Bridge at Asheville, Buncombe, 2.3 miles downstream from Southern Railway station, and 3.1 miles downstream from Swannanoa River. Datum of gage is 1,950.28 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area .- 945 square miles.

Records available. September 1895 to December 1901, January 1905 to September 1922 (at Smith Bridge, 1½ miles upstream), and October 1922 to December 1945 in reports of Geological Survey. September 1895 to December 1901, March 1903 to September 1922 (at Smith Bridge), and October 1922 to December 1923 in North Carolina Department of Conservation and Development Bulletin 34 and Tennessee Division of Geology Bulletin 34. Records prior to January 1, 1909, have been revised in these two bulletins.

Average discharge. 48 years (1895-1901, 1903-1945), 1,409 million gallons per day.

Extremes. Maximum discharge, 71,100 million gallons per day July 16, 1916 (gage height, 23.1 feet, present site and datum, from floodmarks), from rating curve extended above 27,800 million gallons per day; minimum, 154 million gallons per day at times in August and September 1925 (gage height, 0.16 foot).

Remarks. Slight diurnal fluctuation and occasional slight regulation at low flow caused by power plants and small reservoirs above station. Small diversions from tributaries for water supply.

Mean Discharge in Million Gallons per day

													Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		Nov.	Dec.	Mean
1895								_	545	463	559	853	
1896	1202	1402	917	769	756	626	2255	581	496	435	1363	969	981
1897	833	2616	2978	2461	1602	1034	840	621	427	506	555	685	1255
1898	1027	665	808	1202	724	724	1886	2946	2138	3004	846	1395	1456
1899	1628	3605	6292	4858	2946	1066	846	814	782	620	598	1673	2136
1900	1925	3359	3437	3230	1537	3075	1764	969	969	1686	1725	1841	2116
1901	2132	1518	2733	4767	3676	3521	1776	6066	2894	1699	1221	3857	2998
				2662	- (- \		/- 0		7.0	۳.۵	
1903	() 0		- 0 -	3663	1621	3236	1415	1021	678	516	563	509	
1904	640	930	1647	956	1014	917	578	853	533	281	261	405	751
1905	1163	1479	1227	943	1718	1466	3224	2332	846	698	529	2016	1475
1906	3850	1886	2145	2016	1247	2590	2171	2093	3753	3876	2410	1634	2474
1907	1525	1131	1111	1298	1357	1169	711	538	569	368	1008	1932	1060
1908	2158	2758	1815	1544	1382	943	1227	1789	1079	1505	1098	1408	1558
1909	1441	1912	2209	1499	2758	3727	1938	1311	1202	969	762	1318	1752
1910	1156	1292	1389	930	1402	1221	1466	1415	2242	1008	659	911 1286	1258 1039
1911	1221	995	917	2448	1053	659	591	624 1008	711 1014	1027 749	950	833	1360
1912	1092	1634 1292	2590	1932 2351	1673 1479	1350	1544 866	975	•	904	743	1066	1373
1913	969	1292	3527 1040	1641	859	1227 698	622	571	937 471	1751	1195	3682	1235
1915	3146	3030	1841	1202	1318	1421	1376	1098	1195	1925	1466	2733	1808
1916	2177	2364	1499	1311	1441	1848	7429	1860	872	846	769	1253	1979
1917	1273	1350	2823	1725	1034	840	879	724	1298	1027	775	590	1194
1918	1884	1680	1098	1286	1202	1014	801	775	631	2519	2261	3592	1563
1919	2636	1912	2746	1731	1764	1486	1486	1027	606	611	640	1092	1479
1920	1021	1544	1835	3320	1318	1273	1305	2041	1331	808	917	2171	1572
1-/	1			22-0	1 -2 -0						/=1		

French Broad River at Asheville, N. C.

Mean Discharge in Million Gallons per day (continued)

													Yearly
Year	Jan 。	Feb.	Mar.	Apr.	May	June	July	Aug。	Sept.	Oct.	Nov.	Dec.	Mean
1921	1841	2526	1389	1828	1686	1324	1253	1098	853	685	1014	1421	1383
1922	1421	1764	2513	2125	2035	1518	1395	769	556	611	439	1021	1346
1923	1195	1395	1744	1376	2300	1783	1053	898	924	540	730	1234	1264
1924	2061	1525	1705	2093	1370	9 88	1499	762	1059	898	634	1279	1324
1925	2177	1253	1066	814	743	469	381	212	240	344	711	512	741
1926	1208	1176	1130	1234	743	490	519	636	724	466	1130	1324	896
1927	1027	1111	1563	1034	749	795	814	646	550	609	756	1757	952
1928	1118	1118	1273	1873	1957	1460	1337	3721	2584	1525	1001	872	1656
1929	1266	1796	3857	1680	1906	1518	1111	724	1873	2713	2209	1537	1850
1930	1260	1260	1240	969	1047	641	424	338	614	371	711	988	819
1931	1034	698	1105	1983	1214	665	576	691	388	290	328	1492	875
1932	2067	1492	1292	1221	1260	1156	736	866	526	1951	2028	2668	1435
1933	2093	1912	1596	1738	1693	898	814	814	1047	580	492	563	1184
1934	950	859	2216	1402	1027	1667	924	924	1066	1441	1138	1458	1258
1935	2536	1437	1607	1560	1189	751	908	1136	870	503	1249	837	1214
1936	3151	2198	2147	3564	1194	748	680	802	656	2469	1013	1578	1682
1937	3920	2309	1368	1533	1163	920	713	970	1194	1874	1032	944	1492
1938	1024	982	1392	1127	877	1130	1484	1247	783	474	813	714	1005
1939	1238	3321	2381	1382	1120	968	743	1284	555	406	377	426	1170
1940	554	1070	997	1541	801	706	695	3205	1487	593	810	1074	1128
1941	1015	705	1015	1072	601.	498	1556	880	443	362	497	1098	815
1942	938	1547	2012	973	2185	1249	1037	1260	1521	826	711	2020	1358
1943	2401	1964	1945	1780	1650	1388	1972	959	620	490	610	568	1360
1944	1023	1683	2408	1960	1275	880	631	550	575	649	621	762	1082
1945	893	1326	1297	1472	1156	664	757	754	1205	774	897	1680	1071
Summa		Period											
Max.	3920	3321	3857	3564	2300	1783	1972	3721	2584	2713	2209	2668	1850
Min.	554	698	997	814	601	469	381	212	240	290	328	426	741
Mean	1576	1537	1690	1573	1318	1011	960	1046	917	898	878	1193	1214
		Record											
Max.	3920	3605	6292	4858	3676	3727	7429	6066	3753	3876	2410	3857	2998
Min.	554	665	808	769	601	469	381	212	240	281	261	405	741
Mean	1598	1668	1893	1804	1425	1274	1286	1229	1023	1045	933	1391	1409

Maximum Discharge in Million Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Max.
1895									788	507	866	3250	
1896	4970	3250	1230	1740	2210	956	14000	827	788	491	4320	3850	14000
1897	1970	8080	5850	7170	6040	2090	1140	1520	491	911	1330	1140	8080
1898	3110	1050	4160	2210	1520	2090	5850	10200	6450	8660	1140	3400	10200
1899	2330	10900	19300	7620	4010	1380	1700	2120	2120	1030	801	7620	19300
1900	3630	11100	9820	9820	3810	8270	3170	1410	4080	11400	6400	3700	11400
1901	8720	3170	14700	10700	16000	7300	an an an an	12700	5850	3850	1380	17400	
1903	GBED CTETS 9460 CDES	300 Ann (MD (ND)		6720	2760	8010	2620	1980	975	975	1070	975	California cama datas
1904	2620	2760	5870	1980	3680	1870	975	1760	975	446	975	1650	5870
1905	5870	4200	2760	1540	5100	5100	12000	6910	1760	2350	581	4730	12000
1906	16700	3360	4370	5480	2220	7560	4910	5480	11200	10200	9430	2760	16700
1907	4730	1980	1980	3360	5480	2490	975	891	2900	581	4550	5670	5670
1908	9820	9820	4290	4130	2440	1180	2680	7820		5320	2440	3510	9820
1909	3220	3970	3970	2810	6980	9820	2810	2680	4320	1780	769	5140	9820
1910	2810	3810	4130	1500	4630	2810	3220	16200	14100	2680	769	2440	16200

Maximum Discharge in Million Gallons per day (continued)

1		1/10	aximum	DISCH	41 gC 11	1 14111	LOII Ga.	LI ONO 1	per day	(0011	oinaca		Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Octu	Nov.	Dec.	Max.
1911	4460	1980	1500	5860	1590	963	963	2200	5/1/10	4130	1500		5860
1912	2810	4290	6420	3360	2940	2680	2440	2200	3510	1030	2090	1	6420
1913	3660	3220	10500	5500	4630	2680	1680	2090	1980	3660	1030		10500
1914	1500	2090	1250	4970	1250	963	1030	1100		117400	7820		11400
1915	5860	6420	4130	1500	2680	3220	3810	2200	3810	3970	4970		9820
1916	5860	6050	2200	2090	6590	4290	42600	4260	1290	2130	1160	-	42600
1917	2250	3130	6310	4530	77.70	1620	1620	1280	4530	3710	1130	717	6310
1918	۲۵۱۵	3710	1440	3870	1520	2370	1520	1620		14300	8910		16300
1919	5940	3890	5940	2760	2640	3890	3890	2180	930	1290	1140	4530	5940
1920	2180	5570	5040	11000	1760	3010	2640	3150	2070	1640	2380		
1921	4900	6590	2030	6590	3550	1930	2780	1470	1470	2030	1830		6590
1922	4060	4390	4900	4220	4060	2380	2030	1140	1830	1490	478		4900
1923	3790	3100	5780	3790	5780	4720	1810	1310	3230	827	2440		5780
1924	5610	3220	3090	4530	1960	1320	3810	1040	3790	2440	827		5610
1925	4990	1620	1840	995	1180	711	788	276	520	956	2950		4990
1926	5300	5/1/10	2190	2440	2190	749	2560	1230	1620	749	4990		
1927	1840	2690	3500	2310	1130	1320	1730	1130	911	2190	2950	1	
1928	2310	2070	2190	3220	4990	3500	2310		6650	3640	1230		
1929	2740	6310	9040	2190	2820	2950	1320	1320	7040	9300	4380		9300
1930	1620	2770	3220	1230	1840	788	630	556	1660	452	2560		
1931	3360	995	3220	3930	2690	924	995	1230	711	527	499		
1932	3930	1900	2480	2820	3330	2500	924	1810	1030	90110	4840		1
1933	4530	3790	2560	4380	4380	1680	1320	1840	2270	1620	885	1	4530
1934	2980	3800	6650	2330	1760	4080	1380	1720	3310	3560	2750		6650
1935	9820	2760	4720	3840	1700	1160	2030	3700	2560	1030	5990	1920	9820
1936	9300	5030	6320	9040	1590	1070	1770	1210	1030	8010	1760		9300
1937	9300	3930	1730	2800	1880	1370	1680	2020	3260	7690	1370	1410	9300
1938	1670	1370	2590	1720	2630	1840	4900	2380	1340	615	1720	2300	4900
1939	4510	5680	5230	2420	1390	1980	1270	4920	762	633	472	762	5680
1940	2240	3590	1630	5130	1150	1470	1760	17600	7620	969	2090	4320	17600
,1941	1580	1020	1780	2720	956	924	3670	1530	628	879	1160	3190	3670
1942	1540	4850	6780	1290	12900	2430	2360	2400	4320	1180	911	11200	12900
1943	6070	4100	1,770	4610	3610	4130	3590	1490	1540	698	1860	1770	6070
1944	2780	4290	5720	3450	1820	1400	956	1140	2180	1740	1870		5720
1945	1930		3520	2730		937	1290			1830			
Summa	ry of I		1921-l										
Max.	9820	6590	9040	9040	12900	4720	4900	22400	7620	9300	5990	11200	22400
Min.	1540	995	1630	995	, ,	711	630		520	452	472	1 .	
Mean	4108	3449	3890	3389	2931	1931	1987	3140	2628	2564	2184		7046
Summa	ry of F												
Max.		11100	19300	11000	16000	9820	42600	22400	14100	14300	9430	17400	42600
Min.	1500	995	1230	995	956	711				446	472		
Mean	4420	4042	4680	4019	3412	2753	3498			3251	2471		
-		· · · · ·				1	1	1	1 - / - 5				1

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Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1895									475	443	475	475	
1896	526	827	711	546	507	475	459	443	401	413	491	568	401
1897	507	1140	1230	1140	827	678	526	443	401	378	378	428	378
1898	526	526	475	619	507	443	401	1230	956	827	646	591	401
1899	1140	1090	1740	3270	1140	840	617	501	426	426	526	556	426
1900	685	1030	1970	1450	724	866	1290	814	378	378	982	1160	378
1901	1290	1160	1040	2190	1760	2190	1380	1230	1700	1380	1160	1160	
11701	12/0	1100	1040	21/0	1100	2170	1)00	1200	1700		1100	1100	
1903	and can den the		-	1870	1250	1540	808	652	446	388	446	446	
1904	446	581	730	730	652	652	446	446	388	184	178	184	178
1905	388	510	808	652	730	652	1160	975	581	510	510	510	388
1906	1160	1440	1340	1440	808	975	1160	1070	1340	1760	1070	1340	808
1907	1070	891	808	808	808	730	581	388	297	297	333	581	297
1908	1100	1100	1180	1030	1100	769	711	769	769	652	833	898	652
1909	1030	1030	1500	1100	1250	2090	1100	833	769	769	711	652	652
1910	898	833	898	769	711	898	898	652	898	652	652	594	594
1911	711	711	711	833	769	536	433	381	433	433	652	652	381
1912	898	833	1410	1410	1100	963	963	769	652	652	652	711	652
1913	769	833	833	1410	1030	898	594	652	594	536	594	711	536
1914	769	898	833	963	711	594	381	381	381	381	652	1410	381
1915	1780	1410	1250	1030	963	833	_ 769	769	769	1180	963	1030	769
1916	1500	1330	1180	1030	769	1030	1030	1070	678	633	633	840	633
1917	846	782	1360	917	782	659	543	439	659	659	601	491	439
1918		1280	917	917	988	717	601	543	491	407	1140	1140	407
1919	1660	1380	1660	1380	1380	1000	930	736	504	452	504	614	452
1920	614	1000	801	1660	1070	866	801	736	930	633	633	988	614
1921	1220	1550	1140	1070	1220	1070	917	846	633	439	704	782	439
1922	846	1140	1380	1470	1380	988	1070	568	375	394	394	478	375
1923	724	891	891	1060	1060	1060	762	640	556	443	519	827	443
1924	956	1040	1320	1230	1040	749	788	519	430	630	556	556	430
1925	1040	1040	866	711	556	346	262	159	154	218	385	420	154
1926	484	749	788	788	520	385	242	402	420	362	373	711	242
1927	788	749	1040	827	556	556	484	484	379	326	420	593	326
1928	827	827	866	1040	1410	995	995	1320	1040	911	911	788	788
1929	788	1040	1960	1320	1320	995	866	520		1130	1620	1320	484
1930	1090	956	911_	788	711	452	351	286	266	331	336	556	266
1931	630	593	672	1130	788	484	452	452	286	242	266	391	242
1932	1050	1180	827	911	833	736	534	459	341	527	1230	1080	341
1933	1370	1270	1270	1180	1120	659	630	563	534	439	420	420	420
1934	541	534	969	1070	775	924	659	659	644	756	743	950	534
1935	1240	1150	1110	1040	898	528	521	542	514	435	478	646	435
1936	646	1370	1150	1590	762	535	457	521	408	788	795	788	408
1937	2130	1730	1100	1050	891	630	556	678	630	607	833	743	556
1938	788	840	885	814	659	749	572	672	523	425	425	510	425
1939	711	1690	1420	1040	930	630	497	623	443	336	336	349	336
1940	323	420	724	846	607	522	479	433	646	494	607	536	323

French Broad River at Asheville, N. C.

Minimum Discharge in Million Gallons per day (continued)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1941	795	607	600	743	455	349	509	567	337	287	372	397	287
1942	685	846	1050	724	704	846	659	872	749	698	615	795	615
1943	1180	1250	1120	1170	1200	924	1070	665	428	410	435	366	366
1944	652	552	1160	1450	1010	558	459	372	360	433	452	616	360
1945 Summa	602 ry of	525 Period	820 1921 -	846 45	717	450	456	417	391	470	560	801	391
Max.	2130	1730	1960	1590	1410	1070	1070	1320	1040	1130	1620	1320	788
Min.	323	420	600	711	455	346	242	159	154	218	266	349	154
Mean	884	982	1042	1036	885	685	610	570	479	501	591	657	399
Summa	ry of	Record											
Max.	2130	1730	1970	3270	1760	2190	1380	1320	1700	1760	1620	1410	808
Min.	323	420	475	546	455	346	242	159	154	184	178	184	154
Mean	903	982	1071	1124	907	796	690	636	566	559	624	703	443

Week			Γ	1			1111011	-	1	1		1		
		1895	1896	1897	1898	1899	1900	1901		1903	1904	1905	7.006	7.007
Endir	ıg	1095	-							1903			1906	1907
Jan.	7		904	635	691	1630	872	1610		-	455	879	3550	2540
	14		600	586	598	1930	1890	3660			464	2050	1930	1400
	21		698	917	808	1760	2930	2010			510	1070	1720	1250
	28		2680	1140	1960	1340	2270	1540		· com	1120	775	8330	1120
Eab			1100		1050	2440	1210	1670			652	691		
Feb.	4			1450						P. r			3130	1200
	11		2120	4140	659	4810	2020	1720			833	1040	1890	1340
	18		1600	1920	552	2570	6460	1500			632	1630	1600	1050
	25		930	2580	652	2170	3290	1280		1	1440	2160	1810	917
Mar.	4		924	1560	536	5200	5480	1150		1000	898	1510	1690	1290
	11		969	3600	491	1850	3520	1520		Albert Control	3020	1240	1830	1130
	18		975	4440	508	8980	2190	1380		ALPRO A	1230	1290	2070	1170
	25		866	2850	542	10100	2750	2090		6520	1320	1360	2600	975
Apr.	1		891	1780	2050	5420	2560	6850		5800	1430	879	2360	1020
11121 0	8		1040	4410	1520	5790	1930	5940		4140	943	866	1930	1140
1														
	15		801	2470	891	6300	1670	3130		4750	1210	1190	2140	1050
	22		628	1700	743	3740	6070	6200		3370	866	930	2390	1280
	29		576	1260	1560	3790	3580	4410		2210	833	801	1490	1710
May	6		1200	3460	814	3290	2480	2390		1800	820	1310	1500	2110
	13		769	1320	898	3640	1610	2090	1	1590	1620	1820	1280	1400
	20		552	1280	717	2930	1240	2460		1560	866	1750	1040	1040
	27		617	1000	602	2930	1160	7620		1400	749	1290	1100	1070
June	3		552	943	514	1250	1310	3310		2670	1220	2100	1400	1410
0 00010	10		615	1320	468	1010	2440	2910		5430	995	827	1630	1410
	17		530	840	514	1010	3000	4570		3390	730	1400	4570	956
			769	988	1380		3910	3830	1	1920	820	2620	2750	872
+ -	24					1100								
July	1		581	969	583	1060	3460	2970		1810	820	1130	1790	1060
	8		2930	788	464	8110	2120			1740	543	1940	1470	698
	15		4260	904	2320	736	1850			1870	639	6910	1520	691
	22		1430	930	3270	717	1410			1240	484	3130	3450	775
	29		1030	808	1930	1100	1660			891	652	1660	2490	623
Aug.	5		769	579	3280	743	1360	1340		1340	788	1200	1710	601
	12		601	904	404	1070	885	4780		1010	963	3170	1350	440
	19		610	51,2	3370	628	982	9500		1100	691	3150	1870	601
	26		519	561	1760	519	924	6340		846	717	2050	1880	678
Sept	20		459	477	1230	1330	891	6780		698	924	1520	3950	398
Sept.			427							801	756		2580	
	9		605	461	3220	1150	743	3150				1130		373
	16		474	406	1480	665	1480	2500		698	455	820	1740	351
	23	596	437	408	1800	578	1120	3330		698	446	730	6360	580
	30	494	477	414	23/10	517	563	1890		523	437	612	4390	1040
Oct.	7	475	453	382	4240	480	730	2290		446	396	645	7620	465
	14	470	431	610	2870	724	678	1780		711	313	956	3660	398
	21	454	430	594	3070	717	470	1470		534	251	632	2880	333
	28	447	426	473	2730	559	4990	1380		429	206	592	2200	307
Nov.	4	545	485	840	982	652	1650	1360		450	187	592	1630	458
1	11	616	2030	495	775	560	1490	1260		652	360	541	1290	404
	18	536	1440	428	788	529	1070	1180		564	324	510	1420	413
	25	479	642	401	820	560	1230	1190		573	192	521	5420	2290
Des	2				963		3040	1170		464	187	510	1790	1100
Dec.	2	573	2280	561		711						2860	1380	
	9	501	1200	580	879	608	2220	1410		446	552			633
	16	497	827	501	698	3700	1240	5130		446	210	2180	1770	2890
1		1200	743	730	1350	1200	1980	2820		601	210	1950	1820	1800
	31	1260	590	937	2560	1510	1960	6460		556	672	1560	1570	2640
Maxir	num		4260	4440	4240	10100	6460			1	3020	6910	8330	2890
Minir	num		426	382	464	480	470				187	510	1040	307
(Alberta Control			L							·				

Mean Weekly Discharge in Million Gallons per day (continued)

787 - 1-				04.7 110	01123	1	50	1	1	Lons pe		(COLLOT	110007	
Week		0						1				0		
Endi	ng	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
Jan.	7	1890	1820	1260	2390	1480	917	1210	2130	3040	1220	891	3680	652
	14	4020	1320	1250	1020	1070	840	1030	3780	2020	1010	1500	2180	846
	21	1890	1650	995	904	1010	769	853	4020	1660	1720	1540	2020	717
			5	1					1 '	4	1			
-		1250	1120	1160	769	924	1510	833	3050	2080	1200	1840	2810	1520
Feb.	4	1120	1100	975	756	1490	1620	1070	3910	3640	1270	4170	1970	2080
	11	1330	1460	859	1230	975	1210	1450	3370	2620	1010	1320	1560	2270
	18	5720	1750	1420	1050	1120	975	1050	2330	1650	866	1360	1840	1190
	25	2510	2740	1680	917	2410	1320	1480	2420	1670	2060	1830	2240	1060
2/	-													
Mar.	4	1980	2000	2520	840	2230	2010	1120	2170	1890	2240	1290	2250	937
	11	1520	2050	1370	930	1610	1180	1020	2660	1690	3310	1110	3970	1380
	18	1410	2420	1160	879	3290	5960	1140	3030	1390	1720	1030	2600	1920
	25	2490	1950	1020	743	2430	2550	982	1500	1210	2780	1160	2250	1850
Apr.	1	1820	2670	904	1150	3620	5170	995	1370	1410	3330	1020	2420	2810
Mpr.												Į.	1	1
	8	1310	1520	879	2910	2380	2020	1050	1360	1520	2270	1000	1760	7110
	15	1120	1690	795	3160	1580	3440	2270	1240	1540	1960	1910	1850	2510
	22	1660	1450	1140	2630	1540	2380	2200	1090	1200	1490	1200	1820	1940
	29	2080	1350	924	1470	2070	1630	1210	1080	1050	1320	1120	1400	2090
May	6	1450	2690	736	1320	1760	1310	1020	1090	963	1200	1160	1710	1650
May	13	1620	2750	2440	1050	2330	1270	1	1650	872	1090	1110	2000	
								995	4		1		,	1330
	20	1400	1630	1120	963	1600	1140	775	1270	833	930	1170	1750	1270
1	27	1220	4150	1/400	1050	1170	2160	736	1100	2980	1050	1430	1700	1230
June	3	1090	2130	1050	853	1390	1340	711	1990	1410	891	963	1500	1060
	10	1010	5760	969	762	1370	1690	7143	1490	2300	950	1220	1210	1800
	17	1030	3570	1790	603	1330	1130	685	1270	2360	846	788	1070	988
Ì	24	898			603				i .				i .	
-			3490	1170		1020	1050	730	1140	1630	820	1200	1300	1310
July	1	795	2530	1030	594	1700	1030	620	1650	1270	691	982	2450	1070
	8	1710	2290	1540	594	1600	1040	678	2090	1160	749	775	1160	1010
	15	1270	2440	2240	698	1580	788	717	1190	9500	609	717	1090	1160
	22	950	1600	1270	611	1850	704	629	1100	18000	1040	635	2250	2090
	29	1030	1450	1010	506	13/40	911	492	950	3440	1210	866	1560	1140
Aug.	5	1000	1650	1100	597	1300	872	532	1050	2130	788	1000	1070	801
nug.		1250											1 .	
All and the second second	12		1140	1130	652	995	1240	495	846	2750	898	762	1150	1920
	19	891	1780	743	508	975	988	659	1020	1830	795	827	1160	2640
	26	2890	1050	820	411	898	846	524	1560	1410	576	704	859	2090
Sept	. 2	2570	879	6070	1010	788	808	596	840	1060	1520	652	898	2290
_	9	1590	840	3090	652	672	808	442	1970	911	1510	646	685	1640
		1030	859	1150	514	749	698	433	1210	930	911	601	614	1230
	23	833	1690	917	539	950	1490	519	930	769		672	526	1010
											730			
	30		1530	1130	1060	1760	833	501	788	846	1220	611	519	1380
Oct.	7		859	956	521	808	724	595	3020	730	885	504	489	950
	14	1380	1100	1560	898	749	603	493	1630	704	827	459	519	775
	21	756	1180	904	1750	743	672	5290	1790	1180	1300	483	572	685
	28	2090	827	775	1060	743	1530	1050	1580	827	1000	4940	879	788
Nov.	4	2710	769	691	691	730	988	730	1120	749	1100	7750	581	788
1.00		1030	762	659	1040	1100	833	678	1010				526	685
										646	827	1700		
1	18	1150	769	652	1030	743	730	1520	1010	788	775	1800	872	1120
-	25	904	769	652	9211	672	672	937	2600	736	704	1910	565	937
Dec.	2		730	652	956	672	853	4160	1410	975	642	1770	685	1140
1	9	1600	859	1140	730	1090	1030	5920	1120	950	592	1290	704	1340
		1320	2420	730	711	756	872	1930	1070	1060	576	2400	2160	3350
		1290	1230	659	1760	711	756	1710	4470	1120	530	6460	917	2020
		1560	982	1160	1960	808	1450	3650	4410	1850				
Warri											637	4620	730	2220
		5720	5760	6070	3160	3620	5960	5920	4470	18000	3330	7750	3970	7110
Minir	num	736	730	652	411	672	603	433	788	646	530	459	489	652

Mean Weekly Discharge in Million Gallons per day (continued)

[2:2			Mea	II Week	ту ртз	charge	Tti MT	TITOH	Gallon	s per	day (c	oncinu	ea)	
Week					1		(0					
Endi.ng	3	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Jan.	7	1440	898	1890	1240	1690	672	1420	1450	1290	1340	1470	2580	3070
1	14	1940	1330	917	2480	2100	573	950	1140	1360	1210	1220	2540	2250
i	21	2530	1310	756	3310	3260	2570	943	982	1210	1340	879	1810	1680
1	28	872	2200	1060	1540	1970	1160	820	995	1250	1190	730	1250	1640
Feb.	4	1720	1320	1430	1330	1350	1380	911	924	1110	1240	636	2020	1400
1	ιil	2890	1620	1970	1530	1270	1180	769	995	1910	1670	627	1450	2110
1	18	2730	2490	1380	1100	1360	827	950	1120	1380	1160	711	1380	1920
1	25	2730	1560	988	1930	1170	1050	1660	1350	1350	1020	730	1570	2180
Mar.	1	1630	1980	1010	1780	1030	1300	1220	1050	1,060	950	1070	1210	1500
1	เป็	1360	2330	1200	2060	982	1430	2250	1160	3510	1790	1030	1230	1690
1	18	1230	2710	2760	1390	988	1190	1830	1340	5690	1210	814	1010	1490
1	,	1480	1880	2110	1820	1350	937	1270	1270	3550	1150	853	1470	1880
Apr.	1	1460	3270	1280	1480	963	1010	1070	1530	2500	956	1900	1760	1380
ubr.	8	1300	2930	1180	1820	879	1160	937	1400	1830	1020	2690	1530	1480
-	15	1100	2060	1750	2070	782	1820	917	2200	1650	1030	1450	1210	1300
1	22	3070	1870	1460	2950	788	1110	1120	1570	1540	1000	1430	963	2810
I .		1850	1580	1170	1700	801	879	1180	2360	1650	859	2360	982	1490
May	6	1540	2320	2070	1560	749	749	917	1720	2070	788	1290	1820	2000
	13	1480	2000	1840	1510	698	956	762	2900	1920	1120	1760	1100	2340
1	20	1540	2050	2050	1270	904	775	643	1560	2010	1430	1070	904	1430
	27	2250	1950	2320	1130	717	593	621	1890	1630	988	975	1250	1310
	3	1440	1700	3730	1290	550	<u> </u>	859	1480	1750	730	840	1020	1100
1	10	1270	1200	2050	1050	488	491	672	1610	1500	717	698	788	853
	17	1340		1540	1090	463	450	846	1580	1350	652	730	1730	853
I .			1350 1580	1280	859	505		969	1200	1170	627	616	1320	801
		1290		1280	891		516	639	1560	1970	526	541	872	1070
July	- 1	1410	1110	1		393	472 681		•	1	1 .			769
١ ,	8	1050	1330	1170	2160	535	584	510	1290	1240	421	637	911	
	15	1080	1290	1030	2050	412	371	853	1410	1180	392	558	672	711
1	22	1730	1670	1250	1100	302	269	1230	1040	1070	444	530	685	917
	<u>29</u>	1200	1440	801	963	295	424	762	1400	975	423	599	652	820
Aug.	5	1050	930	1010	917	253	1320	584	1670	943	346	506	1110	891
1	12	1140	833	1030	775	240	587	691	1690	801	331	685	1160	672
· ·		1220	840	872	762	215	496	782	9500	724	315	678	833	801
	_	1120	672	769	743	193	642	552	2720	610	403	930	623	730
Sept.	2	904	588	730	578	168	497	672	2180	556	293	552	474	1100
	9	795	561	833	570	188	782	678	5160	930	308	540	525	1600
	16	820	513	769	484	271	1100	582	2260	1110	917	360	383	1200
	23	814	439	1360	1110	190	536	437	1630	1890	749	325	457	743
	30	988	711	814	2200	328	542	418	1270	3960	580	302	762	570
Oct.	7	879	462	566	1410	258	485	363	1140	4950	401	271	917	574
	14	625	917	494	808	236	428	1060	995	1600	391	302	685	464
	21	541	599	568	665	395	476	634	2230	1760	354	273	4800	820
	28	476	528	546	762	479	496	457	1850	3020	340	255	1580	509
Nov.	4	1150	462	557	736	428	406	439	1180	2340	357	349	2750	469
		827	443	1100	625	640	557	452	1030	2030	390	280	1790	615
	18	859	446	614	620	1270	1850	1090	930	2460	1220	295	1380	459
		1220	417	594	659	537	1320	995	1040	2000	859	414	2130	462
Dec.	2	1080	466	833	592	461	1150	711	911	1780	569	366	1690	422
	9	1250	563	1690	1810	508	769	2800	866	1720	1590	1010	1180	535
	16	859	814	1070	1680	463	924	1740	937	1390	788	2340	1990	481
	23	1620	1890	1200	891	537	866	1600	891	1580	652	1650	1890	652
	31	1100	969	1020	988	549	2660	1210	788	1450	1000	1290	5570	. 616
Maxim	um	3070	3270	3730	3310	3260	2660	2800	9500	5690	1790	2690	5570	3070
Minim		476	417	494	484	168	269	363	788	556	293	255	383	422

Mean Weekly Discharge in Million Gallons per day (continued)

7.07			2.00	11 110011	<u> </u>	charge	211 212	111011	1	P P 02	4-5 (0	OII OIII C	
Week		7.001	3005	7006	3.000	7.000	7.000	7.01.0	7017	7010	7010	7.01.1	3015
Endi	ng	1934	1.935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Jan.	7	1030	1530	3420	6400	1090	1040	360	1360	1210	2840	1450	1230
	14	1490	5020	3120	2620	969	1070	526	898	808	1420	833	956
	21	775	1720	4420	3900	820	1090	956	995	911	2710	1200	801
	28	672	2310	2340	3260	1200	885	415	891	833	2320	756	711
Feb.	4	691	1440	1870	2670	1080	3200	461	775	956	2450	632	576
	11	632	1220	2830	2560	904	3490	736	685	1420	2860	898	582
	18	594	1860	2340	2110	859	4300	937	775	2030	1890	2240	1450
	25	551	1320	1830	2320	1120	2080	1910	659	1690	1460	1980	2300
Mom		3190	1210	1500	1720	988	4010	1140	642	1100	1230	2110	1450
Mar.	4						3280	1010	1130	3190	1280	1800	1
	11	3190	1290	1340	1480	1470							1200
	18	1180	2660	1490	1360	1620	2030	969	995	1960	1670	1380	872
	25	1200	1400	2050	1270	1470	1550	853	891	1850	3110	3040	1180
Apr.	1	2530	1300	1130	1150	1210	1510	1060	1270	1470	2130	4050	1890
	8	1300	1450	6380	1570	1230	1420	1080	1560	1120	1490	1980	1370
	15	1340	1380	4330	1560	1350	1230	1340	1080	1070	1330	2030	943
	22	1680	1740	2220	1210	1080	1220	2270	846	872	2470	1740	1650
	29		1730	1800	1840	904	1630	1550	846	795	1870	1920	1900
May	6	1050	1170	1520	1390	795	1260	1050	691	917	1380	1470	1490
	13	891	1160	1370	1110	711	1100	879	717	769	1870	1340	1100
	20	1250	1400	1190	1310	808	1030	730	570	1820	1770	1190	1390
	27	917	1200	969	969	808	1050	685	523	5390	1700	1210	956
Trave	3		911	801	1040	1600	1340	611	489	1470	1300	1140	730
June		1060				1							
	10	2240	904	872	1010	1100	1270	570	483	1230	1150	1100	717
	17	1770	769	827	988	917	891	859	636	1720	1400	911	704
	24	1780	672	659	924	1250	769	859	385	1070	1030	782	698
July	1	1040	563	599	672	963	711	566	479	898	2290	585	509.
	8	1020	691	736	698	678	717	555	1620	885	2660	632	635
	15	1010	724	601	652	665	698	730	2080	885	2570	698	698
	22	859	1250	717	619	1750	678	975	1900	724	1490	717	698
	29	756	1080	532	698	2870	801	602	995	1610	1230	495	891
Aug.	É	917	652	1050	956	1750	808	490	995	1200	1070	749	1160
	12	814	629	969	808	1900	917	574	917	1180	1100	595	846
	19	853	736	711	1200	1120	1890	7490	646	1500	1190	548	698
	26		2510	609	898	762	1780	1160	1070	1370	756	420	659
Sont	. 2		937	717	1380	724	801	6520	652	975	672	483	500
Sept	. 2	1000		CCL TI									
	9	963	1440	665	1800	1160	643	1830	536	2330	590	420	749
	16		866	559	1330	788	521	1100	443	1490	506	545	1080
		1050	643	559	782	601	536	846	385	937	788	590	2350
		1410	553	866	659	572	463	743	377	1480	592	717	827
Oct.	7	1830	476	1410	1010	528	519	645	333	1000	497	782	846
	14	2200	460	3270	724	476	396	578	307	808	461	499	678
	21	1160	441	4350	3390	457	366	568	326	736	488	782	541
	28	866	473	1430	2480	452	368	521	410	801	485	617	1070
Nov.	4	969	665	1030	1430	430	362	1050	665	782	505	571	659
	11		642	1090	1030	1110	355	678	487	704	911	496	587
	18	814	2860	1220	1030	596	355	891	405	685	616	463	846
		1160	911	885	866	1010	417	659	473	698	491	548	1330
Dec.	2		885	801	1050	704	390	698	413	801	451	1040	956
Dec.													
-	9	1800	717	1540	859	587	402	584	1350	1570	494	846	1960
		1120	1150	1290	762	613	369	616	769	1170	444	795	1280
	23		833	1740	943	550	384	1010	691	853	418	641	930
	_	1060	672	1920	1170	1070	542	2070	1690	4430	911	724	2650
		3190	5020	6380	6400	2870	4300	7490	2080	5390	3110	4050	2650
Mini	mum	551	441	532	619	430	355	360	307	685	418	420	500
						2.2						·	

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French Broad River at Marshall, N. C.

Location. Water-stage recorder, lat. 35°47'16", long. 82°39'47", 0.4 mile upstream from Hayes Creek, 1 mile southeast of Marshall, Madison County, and 1.2 miles downstream from Ivy River. Datum of gage is 1,646.79 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 1,332 square miles.

Records available .- October 1942 to December 1945.

Extremes. - Maximum discharge, 15,200 million gallons per day Dec. 29, 1942 (gage height, 7.59 feet); minimum, 386 million gallons per day Sept. 10, 1944 (gage height, 0.92 foot); minimum daily, 404 million gallons per day Sept 10, 1944.

Remarks .- Diurnal fluctuation at low flow caused by power plants above station.

Mean Discharge in Million Gallons per day

Year	Jan 。	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Mean
1942 1943 1944 1945	2804 1134 1136	2273 2036 1780	2359 2784 1668	2016 2324 1828	1850 1505 1475	1552 1054 859	2218 758 866	1081 654 938	703 662 1360	897 565 826 933	796 696 741 1058	2261 646 965 1947	1561 1284 1317
Max. Min. Mean	2804 1134 1691	2273 1780 2030	2784 1668 2270	2324 1828 2056	1850 1475 1610	1552 859 1155	2218 758 1281	1081 654 891	1360 662 908	933 565 805	1058 696 823	2261 646 1455	1561 1284 1387

Maximum Discharge in Million Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Max.
1942										1250	1030	13300	13300
1943	7040	4610	6260	5000	3930	5050	3880	1860	1740	769	2000	1930	7040
1944	3060	5760	6720	4130	2200	1620	1560	1280	2920	2370	1850	1670	6720
1945	2440	4740	4420	3550	2660	1180	1440	1670	5300	2100	2030	4390	5300
Max.	7040	5760	6720	5000	3930	5050	3880	1860	5300	2370	2030	13300	13300
Min.	2440	4610	4420	3550	2200	1180	1440	1280	1740	769	1030	1670	5300
Mean	4180	5037	5800	4227	2930	2617	2293	1603	3320	1622	1728	5322	6353

											<u> </u>		
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1942 1943 1944 1945	1300 743 762	1430 652 646	1300 1370 1070	1340 1740 1090	1350 1190 924	1010 659 568	1230 517 568	749 413 547	519 404 547	749 478 533 594	691 517 5 5 4 65 9	885 420 775 969	420 404 547
Max. Min. Mean	1300 743 935	1430 646 909	1370 1070 1247	1740 1090 1390	1350 924 1155	1010 568 746	1230 517 772	749 413 570	547 404 490	749 478 588	691 517 605	969 420 762	547 404 457

French Broad River at Marshall, N. C.

Minimum

French Broad River at Hot Springs, N. C.

Location(revised). - Water-stage recorder, lat. 35°53°23", long. 82°49'16", at Hot Springs, Madison County, 0.3 mile upstream from bridge on U. S. Highway 25 and 70 and 0.7 mile upstream from Spring Creek. Datum of gage is 1,311.55 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 1,567 square miles.

Records available. - May 1934 to December 1945.

Average discharge. - 11 years, 1,601 million gallons per day.

Extremes. - Maximum discharge, 48,400 million gallons per day Aug. 30, 1940 (gage height, 16.1 feet), by slope-area method; minimum, 110 million gallons per day Oct. 6, 1935, Sept. 28, 1936 (gage height, 2.10 feet); minimum daily 293 million gallons per day Oct. 14, 15, 1941.

Maximum stage known, 19.3 feet July 16 or 17, 1916, from floodmarks a quarter

of a mile downstream.

Remarks. - Diurnal fluctuation during low flow caused by power plant above station.

						10160				<u> </u>			Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean
1934					1344	1899	1331	1143	1234	1751	1380	1881	
1935	3266	1907	2824	2441	1558	1000	1240	1307	1024	623	1539	1001	1643
1936	4590	3271	3746	5067	1594	1037	953	1120	979	3134	1278	2061	2401
1937	5823	3278	1964	2067	1538	1173	909	1317	1508	2205	1271	1280	2023
1938	1498	1546	2391	1568	1211	1483	2005	1582	933	557	1059	908	1395
1939	1545	4246	2933	1780	1363	1178	935	1390	649	485	455	510	1437
1940	634	1346	1317	1940	981	831	917	4269	1853	688	958	1216	1413
1941	1218	825	1305	1309	707	578	1983	975	482	371	537	1123	955
1942	1033	1822	2750	1163	2477	1569	1208	1567	1662	971	870	2673	1651
1943	3138	2637	2760	2269	2021	1661	2411	1158	751	601	742	715	1735
1944	1239	2512	3162	2563	1603	1153	798	685	712	937	833	1143	1441
1945	1377	2142	1976	2010	1745	1023	999	1149	1428	1042	1229	2190	1522
Max.	5823	4246	3746	5067	2477	1899	2411	4269	1853	3134	1539	2673	2401
Min.	634	825	1305	1163	707	578	798	685	482	371	455	510	955
Mean	2306	2321	2466	2198	1512	1215	1307	1472	1101	1114	1013	1392	1601

French Broad River at Hot Springs, N. C.

Maximum Discharge in Million Gallons per day

													Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Max.
1934					1890	4140	2240	1720	4140	4650	2920	6080	
1935	15600	4060	8980	6520	2200	1760	2580	3890	3160	1490	6910	2310	15600
1936	19400	7950	10900	14300	2210	1680	1960	2080	4970	11500	2260	5010	19400
1937	16000	6180	2410	3720	2260	1730	1720	2450	3930	7880	1770	2760	16000
1938	3260	2150	6300	2220	2840	2470	7110	3400	1770	814	2400	2360	7110
1939	5490	7360	5820	2910	1690	2200	1430	5200	1030	911	607	911	7360
1940	2250	4200	2110	6290	1370	1760	2400	32200	8910	1140	2050	4520	32200
1941	1940	1160	2240	2660	1080	1390	4350	1960	775	943	1010	2970	4350
1942	1660	5340	8980	1590	14000	3350	2600	2640	4610	1370	1180	16100	16100
1943	7820	6200	7560	5720	4080	5680	4330	1990	1660	853	2070	2110	7820
1944	3480	7240	8330	4830	2390	1940	1670	1160	3610	3230	2000	1910	8330
1945	3280	5340	5670	3990	3420	1550	1690	2160	5500	2400	2400	5170	5670
Max.	19400	7950	10900	14300	14000	5680	7110	32200	8910	11500	6910	16100	32200
Min.	1660	1160	2110	1590	1080	1390	1430	1160	775	814	607	911	4350
Mean	7289	5198	6300	4977	3286	2471	2840	5071	3672	3098	2298	4351	1272

			747.77.1	Tinuin D	Tacitat	ge III	MTTTTO	II Gall	ons pe	uay		,	
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1001	Jan 8	1000	11101 6		2100	- Carro	U a ± j	1146	Dop o a	0000	21018	BCC.	1/11110
1934					988	1120	820	833	782	917	917	1200	
1935	1540	1410	1340	1490	1140	659	659	659	513	440	578	581	440
1936	840	1730	1590	2110	1070	659	604	589	537	995	963	950	537
1937	3210	2460	1540	1400	1160	795	678	840	749	704	1000	859	678
1938	1100	1130	1230	1130	885	956	743	8140	621	491	491	672	491
1939	898	2130	1650	1320	1140	730	575	743	485	406	381	393	381
1940	3 88	517	943	1030	730	620	594	543	775	581	711	620	388
1941	969	711	698	911	488	377	570	607	335	293	399	421	293
1942	756	988	1180	853	782	1060	736	1010	827	827	769	982	736
1943	1440	1550	1390	1520	1460	1110	1240	769	517	504	541	439	439
1944	840	762	1560	1870	1270	711	529	430	406	578	590	866	406
1945	879	730	1200	1140	1010	652	640	590	590	672	730	1100	590
Max.	3210	2460	1650	2110	1460	1120	1240	1010	827	995	1000	1200	736
Min.	388	517	698	853	488	377	529	430	335	293	381	393	293
Mean	1169	1283	1302	1343	1010	787	699	704	595	617	672	757	489

French Broad River at Hot Springs, N. C.

Mean Weekly Discharge in Million Gallons per day

Week				Mean W	CCALY	DIBCHA	I go III	747 7 7 7	OII Gai	топъ р	er day	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
Endin	o or	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Jan.	7	1//4	2180	4280	9430	1580	1310	432	1660	1270	3580	1720	2050
Jan.	14		6520	4340	3920	1300	1290	568	1090	904	1640	1040	
	21		2110	7560	6190	1130	1370	1090	1140	1020		1	1340
	28		2860	3300	4580	1970		485			31,10	1410	1210
Tob			1760	2800	3820	1580	1170		1070	930	3290	937	1100
Feb.	11		1490	4010	3750	1280	4160 4550	536	950	1090	3390	820	859
	18		2550	3820		1620		891 1190	808 898	1680	4140	1380	904 2820
1	25		1760	2590	3030	1760	5650	2410	749	2300	2470	3260	
Mon			1800	2100	3120	1800	2710			2100	1840	2840	3420
Mar.	4			1880	2430 2220		4360	1470	756	1290	1520	3350	2120
	11		2030			3020	4370	1290	1460	4230	1540	2410	1980
	18		4460	1980	1930	2550	2530	1360	1360	2990	2300	1790	1260
A	25	_	2420	4700	1800	2260	1860	1200	1060	2620	4990	3630	1610
Apr.	1 8		3040	7300	1610	1800	1780	1360	1670	1840	2870	5480	3000
	-		2440	10000	1980	1680	1890	1320	1790	1360	1880	2450	1900
	15		2200	5640	2130	1820	1680	1630	1290	1250	1710	2820	1280
	22		2690	2910	1720	1540	1570	2870	1030	1050	3060	2400	2360
16-	29		2530	2360	2510	1300	1940	2030	1160	963	2470	2360	2440
May	6		1560	2000	1840	1060	1560	1280	879	1070	1700	1800	2000
	13		1490	1850	1510	937	1360	1080	866	879	2250	1770	1720
	20	3000	1820	1630	1750	1040	1250	911	665	1690	2200	1450	2370
	27	1200	1620	1270	1270	1400	1270	833	567	6450	2090	1520	1400
June	3	1260	1160	1070	1320	2040	1600	743	523	1730	1610	1410	1030
	10	2390	1270	1230	1300	1410	1540	665	534	1480	1320	1450	1100
	17	2030	995	1220	1210	1140	1100	917	820	2330	1620	1240	1070
	24	2030	898	879	1210	1650	956	1030	428	1270	1250	1040	1150
July	1	1300	743	788	853	1330	846	736	540	1090	2860	730	736
	8	1370	1320	1080	995	879	898	756	1960	1030	3480	743	872
	15	1710	937	782	795	943	1030	943	2550	1250	2930	898	943
	22	1230	1470	1070	782	2190	762	1250	2730	827	1720	975	969
	29	995	1380	743	859	4080	1000	749	1220	1700	1500	615	1090
Aug.	اخ	1230	891	1380	1210	2180	963	704	1120	1450	1360	879	1680
1	12	1010	808	1550	1190	2410	1000	749	1050	1600	1290	743	1520
	19	1140	782	1010	1430	1440	1830	8660	730	1750	1510	788	930
-	26		2760	756	1380	1000	1990	1440	1140	1770	911	517	924
Sept.	2		1100	904	1670	891	969	9820	704	1070	762	497	698
	9	1120	1670	1090	2280	1300	782	2360	626	2440	691	533	872
	16		1050	769	1780	988	577	1390	495	1630	629	592	1220
	23	1220	756	795	943	743	614	1050	396	1070	943	691	2800
0-1	-30	1650	638	1340	775	691	521	911	380	1690	749	1050	1010
Oct.	71.	2310	568 556	1890	1120	629 51.7	639	756 672	335	1160	605	1100	1140
	14		720	4000 5620	930	547	452	672 665	320	956	556	672	975
	21	1360 1020	529		3300	541	433	665	326	86 6 950	607	1170	762
Nor			571 898	1800 1280	3420 1920	536 498	443	605	376	969	577 652	943	1360 866
Nov.	4	1190	749	1			439	1250	736			717	
	11 18	11,50		1360	1300	1470	423	820	545	853 853	1050	665	756 1080
	25	1030 1410	3500	1590 1110	1270 1050	724	411 528	1030	440 510	853 827	762 616	646 788	1960
Doc	<u>25</u> 2	2860	1190 1100	988	1230	1,00 891	462	769 820	489	969	570	1380	1310
Dec.	9	2400	930	2020	1030	724	461	685	1320	2240	620	1110	2740
	16	1400	1350	1750	1040	820	401	730	833	1490	589	1120	1670
	23		982	2240	1200	698	420	1160	691	1110	516	982	1230
	31	1340	756°	2/190	1800	1360	685	2260	1740	5790	1120	1290	3260
Maxim		1,740	6520	10000	9430	4080	5650	9820	2730	6450	4990	5480	3420
Minim			529	743	775	498	411	432	320	827	516	497	698
TATELLE TH	CUIT		12/	147	117		2 Ω 14 ± ±	476	1 220	021	J	4/1	0,0

38

Location. Water-stage recorder, lat. 35°16'23", long. 82°42'21", 150 feet upstream from State Highway 280, 2.0 miles upstream from mouth, 2.1 miles downstream from Avery Creek, and 3½ miles northeast of Brevard, Transylvania County. Datum of gage is 2,115.13 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 40.4 square miles.

Records available. - December 1920 to December 1945.

Average discharge. - 24 years (1921-45), 79.6 million gallons per day.

Extremes. - Maximum discharge, 5,400 million gallons per day Aug. 15, 1928 (gage height, 11.8 feet), from rating curve extended above 840 million gallons per day; minimum, 9.7 million gallons per day Sept. 19-21, 1925 (gage height, 0.34 foot), result of temporary regulation.

Remarks. - Records excellent except those for periods of ice effect or no gage-height record.

				mean	I DISCI	large .	11 111111	LIOII GE	1110110	per de	y .		V-0-7
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Mean
1920												157	
1921	103	134	82.7	113	110	86.6	105	90.4	57.9	39.8	59.9	96.9	89.8
1922	112	125	189	155	163	131	87.2	48.9	32.4	34.6	25.2	62.1	96.9
1923	71.7	87.2	126	113	189	135	64.6	64.6	55.6	33.6	47.3	77.5	88.5
1924	147	98.2	100	130	85.9	58.4	99.5	54.6	84.0	53.8		89.1	85.9
1925	143	87.9		58.4		34.3	25.8	15.5	22.2	21.5	49.7	33.7	51.0
1926	80.1	103	76.9	89.1	43.9	33.4	40.4	52.6	72.4	42.6		117	71.1
1927	82.0		125	72.4			68.5	60.6	43.6				70.4
1928	75.6	73.0	81.4	127	136	119	110	249	192	105	66.5	53.9	116
1929										141	161	102	
1930	75.6		83.3			45.0	34.3	29.0					
1931	67.8		87.2		81.4	47.3	37.4	54.4					63.0
1932	173	103	94.3	88.5		80.8	51.4	75.6	34.9		145	209	114
1933	150	121	114	123	134	54.3	44.5	48.6	83.3	35.0		38.5	
1934	78.8			80.1			63.0	49.0	65.2		87.9		81.4
1935	175	90.4		84.0		43.0	56.8	110	60.2	31.7		49.0	
1936	182	132	100	211	65.9	40.8	34.4	35.3		132.	58.7	111	95.0
1937	2/12	151	84.0			51.9	41.7	70.4	96.3	130	67.8		97.5
1938	68.5				64.0	82.7	95.0	80.8	47.2	27.5		37.7	64.2
1939	83.3		143	94.3		63.0	43.5	70.4	32.0	21.6		20.5	73.6
1940	26.4		73.0	114	56.7	42.8	42.6	180	73.0	33.7	48.0		67.8
1941	67.2			70.4		26.2	91.7	46.3	24.8	20.2	27.5	80.8	50.3
1942	71.1		125	65.2	143	82.0	78.8	78.8	84.6	50.0	40.8		89.8
1943	132	129	119	120	138	101	109	57.3	39.1	28.4			85.9
1944	58.1		158	138	96.9		40.4	37.2	37.8	30.7	34.0	46.1	70.4
1945	62.6				80.1	43.2	39.4	46.8	74.9	47.6		95.0	Commission of the Commission o
Max.	242	234	189	211	189	135	110 °	249	192	216	161	209	116
Min.	26.4						25.8	29.0		18.5		20.5	50.3
Mean	105	98.8	102	107	103	67.0	62.7	71.1	59.7	58.4	57.8	84.5	79.6

Maximum	Discharge	in	Million	Gallons	ner o	dav

						1		1		1		1	Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Max.
1920												749	
1921	317	336	118	552	278	181	220	142	87	110	210	336	552
1922	497	310	452	329	368	252	126	63	52	76	28	430	497
1923	271	194	475	252	840	291	103	134	310	60	203	203	840
1924	559	210	191	415	152	76	421	142	407	120	47	499	559
1925	322	169	246	87	76	99	47	21	127	76	362	76	362
1926	463	309	159	233	55	85	225	105	225	91	440	399	463
1927	134	142	245	105	66	85	205	167	79	284	265	307	307
1928	119	112	215	245	329	235	245	1580	499	390	112	85	1580
1929										423	351	179	
1930	98	150	273	142	167	57	40	45	317	32	196	307	317
1931	375	105	352	619	154	83	75	154	67	36	45	428	619
1932	534	175	293	171	271	181	75	260	67	1850	428	704	1850
1933	293	229	293	480	801	138	72	129	350	73	97	70	801
1934	402	219	646	115	115	216	121	89	194	297	245	258	646
1935	775	155	284	209	97	70	195	485	176	80	297	121	775
1936	596	464	262	853	94	71	121	75	401	975	100	572	975
1937	588	271	105	220	115	80	178	229	317	736	94	120	736
1938	183	103	179	134	235	144	336	177	105	36	137	96	336
1939	574	590	314	197	85	116	127	711	57	37	31	39	711
1940	103	97	153	459	92	112	116	1620	190	75	122	306	1620
1941	109	68	116	201	55	43	307	74	37	75	122	384	384
1942	170	293	339	90	1200	160	271	124	299	81	56	1180	1200
1943	322	307	246	520	414	242	255	99	143	37	129	152	520
1944	203	267	439	242	141	129	65	75	144	57	122	93	439
1945	224	311	182	436	130	75	65	146	233	201	136	255	436
Max.	775	590	646	853	1200	291	421	1620	499	1850	440	1180	1850
Min.	98	68	105	87	55	43	40	21	37	32	28	39	307
Mean	343	233	274	304	264	134	167	285	203	252	175	321	730

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Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1920												64	
1921	76	76	66	57	76	63	65	65	44	32	34	45	32
1922	57	88	110	110	103	81	65	36	27	26	24	26	24
1923	43	52	54	81	76	70	48	41	34	30	30	50	30
1924	61	71	76	76	66	38	52	36	31	37	30	29	29
1925	65	65	54	47	34	21	16	10	9.7	12	19	23	
1926	25	65	52	35	34	27	19	32					9.7
1927	61	53	85	60			1		32	32	30	54	19
					38	36	30	34	28	25	28	48	25
1928	55	53	53	79	85	73	79	98	85	61	56	45	45
1929		~~~								67	112	79	
1930	64	55	50	52	48	37	30	21	21	23	23	41	21
1931	41	39	49	76	50	34	30	31	17	16	16	34	16
1932	97	73	58	63	54	47	36	36	23	28	87	74	23
1933	93	82	76	73	74	39	33	27	32	26	27	27	26
1934	37	31	62	63	43	47	41	33	28	48	48	61	28
1935	78	71	65	61	54	32	32	30	35	26	27	36	26
1936	39	84	64	90	44	27	21	23	18	37	42	43	18
1937	138	111	65	62	59	37	29	35	44	43	53	48	29
1938	48	53	53	55	45	49	39	47	32	25	24	28	24
1939	37	120	87	66	51	36	31	32	26	17	18	17	17
1940	17	21	45	56	40	29	27	28	39	28	32	30	17
			42		40	-/	41	20	77	20	24	الر	1

Minimum Discharge in Million Gallons per day (continued)

	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
	1941	51	36	35	45	27	20	26	32	19	16	19	21	16
	1942	43	62	68	49	43	54	43	52	43	42	35	47	35
	1943	76	76	70	71	78	66	59	38	28	25	25	20 ′	20
	1944	36	33	77	104	70	41	28	25	21	25	23	34	21
	1945	35	31	59	60	50	32	28	26	25	30	34	48	25
	Max.	138	120	110	110	103	81	79	98	85	67	112	79	45
-	Min.	17	21	35	45	27	20	16	10	9.7	12	16	17	9.7
1	Mean	57.2	62.5	63.9	67.1	55.9	43.2	37.8	36.2	30.9	31.1	35.8	41.2	24.0

Mean Weekly Discharge in Million Gallons per day

Week				1	1	1			1	1	,		
Ending	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
	7	86	61	113	101	96	48	105	100		81	116	201
	4	132	86	52	182	148	51	85	77		78	67	234
2	1	114	152	47	220	219	147	74	64		76	54	147
	8	87	157	68	110	128	75	66	63		68		
		83		80	86		104		63		00	43	105
	4		109			89	106	68	63		81	41	160
1	ᆡ	167	120	106	105	102	92	57	75		83	43	110
1 -	8	135	163	106	72	94	79	79	75		68	60	89
	5	148	105	63	123	78	121	101	78		59	59	103
	4	94	165	65	102	68	92	90	66		54	74	75
1	1	81	180	70	120	62	96	153	83		122	78	79 6 3
1	8	73	167	209	83	65	77	169	85		78	57	63
2	5	90	137	158	106	110	62	104	76		83	59	120
Apr.	1 8	85	262	101	89	68	75	94	99		61	174	136
	8	70	203	114	110	69	92	75	110		78	198	109
1	5 2	72	151	138	121	63	125	71	143		59	104	87
2	2	211	143	114	190	53	82	72	105		64	171	69
2	9	105	120	90	107	50	62	67	156		56	136	69 68
May	6	88	186	134	99	43	52	60	132		52	97	127
	3	92	143	115	99	44	48	49	193		84	109	65
	0	115	162	183	81	56	45	43	103		105	72	65 64
	7	154	176	148	75	43	36	41	137		67	65	99
	3	81	151	379	76	34	35	46	94		49	51	73
1	o	78	153	177	65	41	30	42	139		50	45	73 63
	7	83	115	116	65 67	32	28	47	130		44	54	136
	4	75	143	98	50	30	39	56	92		44	50	
July	1	115	86	90	52	34	36	40	127		42	38	79 52 59 45 55 45
oury	8	76	102	77	184	34	37	39	103		36	36	50
1	5	118	83	61	99	32	23	114	103		34	34	1.5
1 2	5 2	123	87	71	62	21	20	81	89		33	38	45
2	9	109	83	17	65	18	45	52	110		32	42	1.5
A336	5	106	59	53 61	74	17	115	44	144		34	42	120
Aug.	2	85	56	0.2	59	17	44	72	127		26	56	100
			1 20	93	27								
1 7	9	92	52	63	50	17	41	78	606		26	49	61
	6 2	90	43	48	48	114	58	48	183		35	81	45 37
1 1	- 1	71	39	49	37		37	52	163		23		31
	9	62	33	58	34	13	114	64	373		25	36	37
	6	53	31	38	33	16	83	45	174		98	22	27
2	3	59	30	85	91	12	49	35	127		70	21	30
3	0	56	32	46	191	50	52	29	94		42	19	45 55
	7	47	33	35	81	14	58	26	80	233	29	17	55
1	4	37	43	32	52	16	40	87	66	99	28	21	37
	1	34	36	37	43	21	38	45	127	116	25	17	646
	8	32	30	30	46	37	38	34	152	135	24	16	125
	4	54	26	57	39	23	33	32	83	174	26	20	201
	1	43	25	48	35	38	57	30	65	143	25	16	136
1	.8	48	25	34	32	110	189	84	59	189	109	16	103
2	5	90	25	36	34	30	107	54	77	138	67	28	182
Dec.	2	103	26	61	30	26	97	46	58	127	45	26	116
	9	74	32	104	156	37	60	158	52	98	134	94	79
	6 200	48	45	70	81	30	87	134	59	83	53	128	191
	3 145	144	117	78	53	35	72	114	57	126	54	112	172
3		94	63	63	84	35	244	97	47	96	99	120	415
	1 177	/ -											
Maximum		211	262	379	220	219	244	169	606		134	198	646
					220 30	219	244	169 26	606 47		134 23	198 16	646

42

Little River near Penrose, N. C.

Location. Water-stage recorder, lat. 35°12'23", long. 82°38'07", 0.4 miles downstream from Cascade Lake Dam, 1.2 miles upstream from Hart Branch, 2.2 miles upstream from Crab Creek, and 3.3 miles south of Penrose, Transylvania County. Datum of gage is 2,099.60 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. 41.4 square miles.

Records available .- October 1942 to December 1945.

Extremes. Maximum discharge, 1,760 million gallons per day Dec. 29, 1942 (gage height, 9.44 feet); minimum and minimum daily, .19 million gallons per day (regulated) Oct. 24, 1943 (gage height, 0.18 foot).

Remarks. - Considerable diurnal fluctuation and some regulation at low flow caused by small power plant above station.

Mean Discharge in Million Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Mean
1942 1943 1944 1945	152 92.4 73.0		140 186 103	133 138 118	129 96.9 78.2	85.3 65.9 40.4	38.2	67.2 28.7 54.7	49.9 37.5 73.6	36.0	59.9	43.5 64.1	93.7 79.5 80.1
Max. Min. Mean	152 73.0 106	134 91.7 113	186 103 143	138 118 130	129 78.2 101	85.3 40.4 63.9	116 38.2 74.7	67.2 28.7 50.2	73.6 37.5 53.7	65.9 29.3 47.5	64.6 42.3 56.2	43.5	93.7 79.5 84.4

Maximum Discharge in Million Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Max.
1942 1943 1944 1945	377 256 103	282 333 290	295 544 227	634 213 225	234 172 198	187 115 '51	220 54 174	112 50 93	76 101 375	97 63 63 84	85 95 163 146	1440 128 107 283	1440 634 544 375
Max. Min. Mean	377 103 245	333 282 302	544 227 355	634 213 357	234 172 201	187 51 118	220 54 149	112 50 85.0	375 76 184	97 63 76.7	163 85 122	1440 107 489	1440 375 518

			24421121	1100111 25 11	JOHAL EC			GWII OII	o por	٠.٠٠			
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.		Yearly Min.
1942										53	47	48	
1943	80	70	80	35	80	47	62	17	.84	.19	.97	.90	.19
1944	57	3.36	90	105	72	40	9.0	3.10	3.62	2.39	2.26	41	2.26
1945	43	5.4	45	72	1.49	19	15	34	16	2,26	4.07	76	1.49
Max.	80	70	90	105	80	47	62	34	16	53	47	76	2.26
Min.	43	3.36	45	35	1.49	19	9.0	3.10	. 84	.19	.97	.90	.19
Mean	60.0	26.3	71.7	70 .7	51.2	35.3	28.7	18.0	6.82	14.5	13.6	41.5	1.31

Little River near Penrose, N. C.

		Mear	weekly	Dischar	ge in Mi	IIIon Ga	llons pe	r day		
Week										
Ending	1942	1943	1944	1945						
Jan. 7		171	126	82						
14		109	79	78						
21		166	93	78 68						
28		152	78	67						
Feb. 4		155	93 78 57	48						
11		196	43	40		1				
18		130	171	94						
25		98	134	161					1	
Mar. 4		98 87	141	114					 	
11		00	134	00						
18		99 128	127	90 73						
			21.7	100						
25		209	247	109						
Apr. 1		149	282	134						
ا م		107	149	123						
15		90	130	80						
22		210	125	96						
29		130	141	171						·
May 6		97	114	106						
13		112 145	105	81						
20		145	97	98						
27		163	85	98 49 51						
June 3		107	83	51						
10		83	83	47						
17		75	70	41						
24		69	70 55 43	41 36 31						
July 1 8		129	43	31					and the state of t	
8		154	44 42	46 56						
15		119	42	56						
22		96	38	59						
29		94 75	33 36	114						
Aug. 5		75	36	91 63 50 45						
12		74	30	63	1					
19		86	30 28	50						
26		74 86 56	22	45						
Sept. 2		45	30	34						
9		48	29	58						
16		48 47	29 37	45						
23		44	39	146						
30		ЦЦ 63	39 42 57 32 30 26	34 58 45 146 59 74 56 29 70						
Oct. 7	82	36	57	74						
14	67	32	32	56						
21	67 59 59 59 59 56 58	32 29 23 29 51 69	30	29						
28	59	23	26	70						
Nov. 4	59	29	70	54						
11	59	51		40						
18	56	69	40	63						
25	58	29	45	40 63 96 79 149						
Dec. 2	68	29 14	89	79						
9 16	121	48 25 36	74	149						
16	90	25	75	97						
23	79	36	63	97 79						
31	430	72	49 40 45 89 74 75 63 43	219						
Maximum		210	282	219						
Minimum		14	282 22	29						
				2/		i	_		1	

Crab Creek near Penrose, N. C.

Location. Water-stage recorder, lat. 35°14°02°, long. 82°36°39°, 0.4 mile downstream from Henderson County line, 1.6 miles upstream from mouth, and 3 miles southeast of Penrose, Transylvania County. Datum of gage is 2,107.43 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 10.9 square miles.

Records available. - October 1942 to December 1945.

Extremes.— Maximum discharge, 650 million gallons per day May 14, 1943 (gage height, 7.00 feet), from rating curve extended above 291 million gallons per day; minimum, 4.46 million gallons per day Sept. 9, 1944 (gage height, 0.49 foot); minimum daily, 5.5 million gallons per day Sept. 9, 10, 1944.

Remarks .- Records good except those for periods of ice effect, which are fair.

Mean Discharge in Million Gallons per day

		_ ,	3.6			_						_	Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean
1942										14.2	12.3	30.9	
1943	30.9	28.7	28.4	27.0								9.82	21.3
1944	15.9	23.6	39.0	30.8	23.7	16.8	11.0	8.53	. 8 . 08	8.53	11.0	12.1	17.4
1945	12.3	18.3	20.2	20.8	16.6	9.37	13.9	13.2	16.3	11.3	11.6	24.9	15.7
Max.	30.9	28.7	39.0	30.8	32.8	24.2	28.7	15.9	16.3	14.2	12.3	30.9	21.3
Min.	12.3	18.3	20.2	20.8	16.6	9.37	11.0	8.53	8.08	8.53	10.3	9.82	15.7
Mean	19.7	23.5	29.2	26.2	24.4	16.8	17.9	12.5	11.7	10.7	11.3	19.4	18.1

Maximum Discharge in Million Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Max.
1942 1943 1944 1945	71 65 19	53 47 55	57 118 39	107 48 33	9 7 52 26	67 40 12	50 25 34	29 16 43	27 21 73	17 12 26 25	17 30 26 19	209 35 22 7 4	209 107 118 74
Max. Min. Mean	71 19 51.7	55 47 51.7	118 39 71. 3	107 33 62.7	97 26 58.3	67 12 39.7	50 25 36.3	43 16 29.3	73 21 40.3	26 12 20.0	30 17 23.0	209 22 85.0	209 74 99.7

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1942 1943 1944 1945	19 10 8.4	19 9.7 8.4	19 19 14	17 25 14	18 19 12	14 11 7.1	18 7.8 7.1	12 5.8 8.4	8.4 5.5 7.1	13 7.8 5.9 9.0	7.8 7.8 9.0	13 6.5 9.7 11	6.5 5.5 7.1
Max. Min. Mean	19 8.4 12.5	19 8.4 12.4	19 14 17.3	25 14 18.7	19 12 16.3	14 7.1 10.7	18 7.1 11.0	12 5.8 8.73	8.4 5.5 7.00	13 5.9 8.93	11 7.8 8.90	13 6.5 10.1	7.1 5.5 6.37

Crab Creek near Penrose, N. C.

Ending Jan. 7 14	1942	1943	1944	101.5		i			
		2.7		1945					
171 1		31 21	24 13	15 14			1		
21 28		21 34 34 34 39 27	17	12					
		34	12	10					
Feb. 4		34	10	9.0					
11		27	15 32	9.0 21					
25		23 19	32 25 28	28					
Mar. 4		19	28	21					
11 18		21 26	30 25	18 15					
25		41	48	20					
25 Apr. 1 8 15 22		30	64	27					
8		23	34	23 16					
15		20 40	30 28	16 10					
29		26	28	19 25					
29 May 6		21	25	21					
13		25	23	17					
20 27		36	26 23	18 14					
June 3		25	24	12					
10		25	20	10 9.7 8.4					
17		23	16 15	9.7					
July 1		25 53 36 25 25 23 17 35 35 36	ירר ור	7.8				 	-
8		35	12 14	13					
15 22		36	14	17					
22		23	10 8.4	15 11					
Aug. 5 12 19		21	10	15					
12		19 18	8.4	12					
19		18	8.4	17					
26 Sept. 2 9 16 23		13 12	10 8.4 8.4 6.5 8.4 6.3	13 14 15 14 15 12 17 12 8.4					
9		10	ا ره ب	0 •4					
16		9.0	9.0 7.8	15					
30		14 9.7	9.0	ار <u>د</u> 1)،					
30 Oct. 7	15	9.7	7.8	30 14 12					
14 21	14	8.4	7.1	10					
21 28	14 14	8.4 9.0	11 9.0	9.7 14					
Nov. 4	14	8.4	12	10					
11	12	15	9.0	9.0 12 15					
18	12 12	9.7	7.8 9.7	12					
25 Dec. 2	12	9.0 8.4	9.7 15	15					
9	14 23 17	8.4	14	28					
9 16	17	8.4 8.4 6.5	12	17					
23	14 68	י ר	11 11	12 28 17 14 41					
Maximum	00	53 6.5	64	71					
Minimum		6.5	6.3	41 7.8					

Boylston Creek near Horseshoe, N. C.

Location. Water-stage recorder, lat. 35°22'10", long. 82°33'50", 100 feet upstream from county highway bridge, 1.7 miles upstream from mouth, and 2 miles north of Horseshoe, Henderson County. Datum of gage is 2,069.39 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 14.8 square miles.

Records available .- December 1942 to December 1945.

Extremes. - Maximum discharge, 245 million gallons per day Dec. 29, 1942 (gage height, 3.50 feet); minimum 4.39 million gallons per day Dec. 17, 18, 1943 (gage height, 0.52 foot), result of low temperature.

Remarks. - Records good except those for periods of ice effect, no gage-height record, or shifting-control, which are fair.

Mean Discharge in Million Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Octo	Nov.		Yearly Mean
1942												47.2	
1943	39.6 17.1	36.5 29.2	35.0 43.7	29.8 34.1	21.8 26.5	24.4 21.9	28.4 13.8	19.1 10.2		10.6	11.4 11.8	9.37 13.4	22.9
1945	14.3	23.1	22.3	20 .1	18.4	11.7	15.0	12.9		12.7	13.0		17.4
Max.	39.6	36.5	43.7	34.1	26.5	24.4	28.4	19.1	19.8	12.7	13.0	47.2	22.9
Min.	14.3	23.1	22.3	20.1	18.4	11.7	13.8	10.2	10.5	10.6	11.4	9.37	17.4
Mean	23.7	29.6	33.7	28.0	22.2	19.3	19.1	14.1	14.0	11.7	12.1	24.2	20.2

Maximum Discharge in Million Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Max.
1942 1943 1944 1945	145 67 28	75 70 90	99 151 44	83 65 30	30 50 32	94 37 14	51 22 34	74 20 43	23 42 89	13 30 32	36 30 33	220 30 29 80	220 145 151 90
Max. Min. Mean	145 28 80.0	90 70 78.3	151 44 98.0	83 30 59.3	50 30 37.3	94 14 48.3	51 22 - 35 . 7	74 20 45.7	89 23 51.3	32 13 25.0	36 30 33.0	220 29 89.8	220 90 129

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1942 1943 1944 1945	23 10 10	26 9.0 9.0	21 21 17	23 19 14	18 20 13	14 14 9.7	18 9.7 9.7	12 8.4 7.8	7.8 8.4 7.1	9.7 9.0	8.4 8.4 9.7	16 6.1 10 12	6.1 8.4 7.1
Max. Min. Mean	23 10 14.3	26 9.0 14.7	21 17 19.7	23 14 18.7	20 13 17.0	14 9.7 12.6	18 9.7 12.5	12 7.8 9.40	8.4 7.1 7.77	10 9.0 9.57	9.7 8.4 8.83	16 6.1 11.0	8.4 6.1 7.20

Boylston Creek near Horseshoe, N. C.

Week					-0/5						
Ending		1942	1943	1944	1945						
Jan.	7		32 25 54 43	25	19						
	14 21 28		25	14	14 14						
	28 2T		54 1.2	21 12	14						
Feb.	4		1,2	9.7	9.7	<u> </u>			1	 	ļ
100.	ıi		50	18	ní						
	11 18		34	41	11 26						
	25		42 50 34 29 26	41 28	39 24				1		
Mar.	4			37 32 23 57 74	24						
	11		23	32	21						
	TO		32	23	18 21						
Apr.	18 25		23 32 56 33 27 25	7),	27			 		 	<u> </u>
T.P.	8		27	26	19			, ,			
	15		25	26 38	19 15						
	22		37	33	19						
1	29 6		30 24	33 38 28	26				1		
May	7.2	-	24	28	23				1		
	13 20		23	24 30	19						
	27		21 22 18	26	21 15 13 12 11						
June	27 3 10		18	23	13					 	
	10		17	27	12						
	17		20	25	11				1		
	24		17 20 15 50 39 34 21 19	27 25 20 15 15	12						
July	1 8		50	15	11						
	15		3),	17	17 16						
	15 22		21	14	13						
	29		19	11	11						
Aug.	29 5		18	12	11 25						
	12		30 19	9.7	14			ĺ			
	19		19	10	9.7			İ			
Sont	26		14	9.0	10 8 . 4			<u> </u>	ļ	-	
Sept.	9		12 10 8.4	9.0	12						
	16		8.4	12	21						
	23		T)	11	34						
	9 16 23 30 7 14 21 28		10	14	21 34 15 14 11 12 15						
Oct.	7		10	13	14						
	21		10 11	11	12						
	28		11	14 10	15						
Nov.			10	10	10			·····		†	
	11		17 10	9.7 9.0	9.7 12						
	18		10	9.0	12						
Doo	11 18 25 2 9 16 23		9.0 8.4	11	18			ļ			
Dec.	2		8.4	19 15	32						
	16		7.1	15 14	17						
	23	17	7.1	11	14						
	31	77	14	12	45						
Maximu			56	74	12 18 13 32 17 14 45 45						
Minimu	TU		7.1	9.0	0.4	1	L	L		1	L

Location.(revised).- Water-stage recorder and two sharp-crested weirs, lat. 35°21'58", long. 82°44'22", at The Pink Beds in Pisgah National Forest, 400 feet downstream from Thompson Creek and 9 miles north of Brevard, Transylvania County. Datum of gage is 3,138.38 feet above mean sea level.

Drainage area. - 9.99 square miles.

Records available .- February 1926 to December 1945.

Average discharge .- 19 years, 19.5 million gallons per day.

Extremes.-Maximum discharge, 1,430 million gallons per day Aug. 15, 1928 (gage height, 8.0 feet), from rating curve extended above 275 million gallons per day on basis of computation of flow over weirs; minimum, 1.03 million gallons per day Sept. 3, 1930.

Remarks. - Records excellent except those for periods of ice effect, or no gage-height record, which are fair.

,						50 111							
V- 0	Ton	D-1-	Ma	A	Mo	T	T7		g t		NY.		Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	UCT.	Nov.	Dec.	Mean
1926			22.2	24.4	11.7	7.04		10.1	5.52		20.6	23.3	
1927	16.9	17.3	27.7	14.0	9.30			12.5	4.88	9.95	11.4	34.9	14.8
1928	22.0	16.0	18.9	31.1	32.3	32.9	22.1	54.5	33.4	19.0	11.7	9.43	25.3
1929	27.8	29.8	77.5	24.0	36.9	20.9	9.69			37.4	35.2	20.7	28.9
1930	14.8	13.9	15.7	11.0	10.5	5 .5 6	3.10	1.87	6.59	3.23	11.2	13.6	9.17
1931	17.8	11.8	19.7	32.0	18.9	9.50		13.1	5 .7 5		4.04		14.3
1932	42.2	23.1	21.8	19.3	21.7	20.0	13.4	17.1			39.1	46.6	26.4
1933	31.9	25.3	27.3	28.4	24.2	9.11	8.98	10.4	24.5	7.95	7.69	7.43	17.7
1934	22.9	14.9	41.9	21.5	12.9	30.9	14.2	7.88	12.9	17.9	19.4	19.8	19.8
1935	44.5	22.1	27.3	22.2	14.9	8.14		30.1	16.5		15.3	12.1	19.4
1936	50.3	32.9	28.4	47.5	13.0	8.33				46.2	14.5	32.0	24.9
1937	68.5	35.5	17.9	24.0	14.3	9.63		13.2	20.5			16.2	23.1
1938	16.8	14.1	21.0	19.6	17.9			20.7	9.04		-		16.5
1939	25.5	69.8	36.8	21.1	13.9	16.0		14.3	62.7		3.75		
1940	5.48	14.2	22.0	34.9	13.2	14.1	12.1	67.8	20.7	7.62	11.8	22.0	20.5
1941	16.2	9.04	15.6	18.3	8.59	4.66	18.8	13.6	4.83	4.15	7.30	28.1	12.5
1942	20.9	29.8	39.1	16.8	38.0	19.9		17.6	19.5	11.1	8.59	41.5	23.1
1943	35.5	32.0	21.1	30.7	35.9	24.0	25.2	11.8	6.12	4.75			20.9
1944	17.0	29.6	44.3	32.1	18.4	10.9	7.11			7.17			16.5
1945	16.5	23.3	21.3	33.0	21.1	10.7	8.14		21.6	12.7	17.2	24.7	18.0
Max.	68.5	69.8	77.5	47.5	38.0		25.2	67.8		46.2		46.6	28.9
Min.	5.48			11.0	8.59		-			3.23	3.75		
Mean	27.0	24.4	28.9	25.3	19.4	14.9	12.0	17.2	13.2	14.6	14.2	20.6	19.5

Maximum Discharge in Million Gallons per day

						3			E P		i		Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug。	Sept.	Oct.	Nov.	Dec .	Max.
1926			45	63	16	13	51	31	14	13	81	89	
1927	29	41	68	21	21	23	18	45	7.8	104	78	81	104
1928	41	27	57	61	96	70	37		121	85	29	16	397
1929	102	121	322	49	88	34	14	9.7	158	157	90	43	322
1930	20	34	67	23	25	9.0	4.65	3.49	35	4.52	56	70	70
1931	79	22	72	96	37	21	26	30	13	5.8	11	94	96
1932	132	36	83	43	73	48	69	53	19	272	133	183	272
1933	68	58	76	138	83	19	34	28	100	23	25	13	138
1934	129	81	179	34	19	94	26	11	55	62	64	52	179
1935	181	44	76	55	20	14	35	160	67	21	79	30	181
1936	175	132	86	170	23	26	36		116	356	26	185	356
1937	194	69	24	59	22	19	15	45	70	214	26	27	214
1938	54	26	59	40	90	71	83	46	19	6.4	55	27	90
1939	177	163	94	39	18	37	19	140	10	9.7	7.1	7.8	177
1940	23	32	59	162	24	54	43	581	59	13	39	105	581
1941	30	15	27	61	15	7.8	55	56	7.1	21	32	124	124
1942	43	92	104	27	258	47	63	49	92	17	16	297	297
1943	83	72	76	147	107	85	52	34	28	10	38	44	147
1944	58	78	121	52	32	22	26	17	36	21	47	23	121
1945	63	93	43	143	41	26	17	17	74	58	43	69	143
Max.	194	163	322	170	258	94	83		158	356	133	297	581
Min.	20	15,	24	21	15	7.8	4.65			4.52		7.8	70
Mean	88.5	65.1	86.9	74.2	55.4	37.0	36.2	88.6	55.0	73.7	. 48.8	79.0	211

													Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Min.
1926			14	14	7.8	4.91	2.07	3.62	3.36	3.49	3.75	11	
1927	13	12	14	12	6.3	5.4	4.52	5.0	3 . 36	3.10	4.65	11	3.10
1928	14	12	11	17	19	16	14	17	15	9.0	9.0	6.5	6.5
1929	10	15	35	16	20	12	7.1	3 .49	3.10	12	20	16	3.10
1930	10	7.8	9.0	8.4	6.5	3.62	1.94	1.29	1.23	2.71	3.10	6.3	1.23
1931	9.0	9.0	11 .	16	13	6.1	4.39	7.1	3.88		2.84	4.52	raw Guy Caro Sarr Sarr
1932	19	14	12	11	11	11	7.8	6.1	4.65	6.5	21	16	4.65
1933	19	16	17	14	13	5.6	5.0	5.6	7.8	5.6	5.6	5.6	5.0
1934	9.7	5.6	17	16	9.0	13	8.4	6.1	4.39	9.0	10	13	4.39
1935	17	16	18	16	11	4.52	4.52	5.6	7.1	5.4	5.7	9.0	4.52
1936	10	19	14	19	7.8	4.20	2.65	5.4	4.20	11	10	10	2.65
1937	36	25	13	12	9.7	6.4	4.72	4.33	8.4	8.4	11	9.7	4.33
1938	10	12	12	12	9.0	14	9.7	10	5.9	4.01	4.01	7.1	4.01
1939	10	32	19	15	11	7.8	5.1	4.91	4.72	3.29	3.10	2.91	2.91
1940	2.91	3.88		16	8.4	7.1	7.1	7.1	10	5.9	7.1	7.1	2.91
1941	11	7.1	6.5	11	5.8	2.91	4.65		3.29	2 .45	4.33	5.36	2.45
1942	14	17	17	9.0	10	11	6.3	11	7.8	8.4	6.5	12	6.3
1943	18	17	15	16	17	12	14	5.9	3.94	3.81	4.20		3.29
1944	8.4	8.4	21	23	12	5.7	4.01	3.42	2 .65	4.33	44.6		2.65
1945	6.3	5.3	14	14	12	6.5	5.3	3.62		7.1	8.4	15	3,62
Max.	36	32	35	23	20	16	14	17	15	12	21	15	6.5
Min.	2.91	3.88		8.4	5.8	2.91	1.94			2.45	2.84		1.23
Mean	13.0	13.4	15.1	14.4	11.0	7.99	6.16	6.18	5.43	6.08	7.44	8.99	3.76

Week					marge 1				r day	<u> </u>	
Endin	g	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Jan.	7 14 21		23 16 16	31 25 16	26 47 19	18 16 14	26 20 15	50 60 34	48 36 25	39 30 15	22 87 27
	28		14	19	22	12	12	22	24	12	49
Feb.	4		16 12	13 16	17 22	14 17	11 10	39 25	19 27	13 12	24 18
	18		17	17	18	13	12	22	23	10	29
Mox	25	20	23 17	17 14	26 78	12	12	22 15	32 19	10	19
Mar.	4	29 28	32	18	61	10 25	19 19	17	32	75 47	21 21
	18	22	43	19	149	15	13	13	23	21	45
Apr.	25 1	17 23	23 19	1.8 24	65 41	14	13 37	28 37	38 20	21 45	45 25 23 22
0	8	26	15	27	27	13	47	26	19	22	22
	15 22	32 24	14 14	34 25	23 19	11 11	23 29	19 14	21 53	23 23	21 26
	29	16	13	40	25	9.0	28	13	23	17	21
May	6 13	13 14	11 9.0	30 52	45 32	8.4 13	20 25	30 12	35 32	15 12	15 15
	20	13	7.8	24	25	14	17	16	19	16	17
	27	9.0	7.1	30	37	9.0	17	26	16	11	16
June	3 1 0	8.4 7.1	14	21 36	41 25	6.5 7.1	13 9.0	22 12	125 9.0	16 48	12 10
	17	7.1	11	49	17	6.2	11	31	8.4	28	8.4 6.5 5.2
July	24 1	7.8 5.5	12 7.1	23 28	15 20	4.97 3.81	7.1 9.0	24 14	7.8 10	31 '	5.2
o ary	8	6.3	6.1	26	12	3.29	6.5	12	7.8	17	7.8
	15 22	3.36 2.45	8.4 12	23 18	10 9.0	3.42 3.49	7.8 6.5	8.4	6.1 9.7	16 12	7.8 19
	29	14	8.4	20	7.8	2.52	10	9.0	12	12	16
Aug.	5	29	6.5	30	8.4	1.81	11	28	13	9.7	8.4
	12 19	11 7.8	13 22	25 146	7.1 5.4	1.55 1.94	14 9.7	23 14	7.1 12	7.8 7.1	7.8 41
	26	5.8	8.4	33	4.46	2.45	19	9.7	7.1	7.8	64
Sept.	2 9	3.94 7.1	9.0 5.7	26 71	3.55 5.8	1.42	9.7	9.0	13 59	5.6	19 31
	16	7.1 5.7 4.52	5.2	27	9.7	9.7	5.0	5.5	23	21	16
	23 30	4.52 5.0	4.33 3.55	19 16	10 59	9.7 6.5	4.59	6.1	11 7.8	14 13	11 8.4
Oct.	7	6.5	2 1.0	13	70	3.36	3.23	16	8.4	20	6.5
	14	6.5 5.2 4.39	25 7.8	9.0 25	18	3.36 3.55 2.84	3.88 3.29	10 110	5.9 12 6.5	29 15	6.3
	21 28	4.91	L ノ 04	30	31 36	2.84	2.91	35	6.5	10	6.5
Nov.	4	4.01	5.5	14	45	3 .49	3.81	35 54	1 6 2	19	8.4
	11 18	9.0 38	4.97	10 9.0	32 39	4.46	3.23 2.97	45 25	12	17 11	8.4 32
	25 2	20	13	16	28	25 12	6.3	43	1 0.4	20	12
Dec.	2 9	23 13	14 52	10 9.0	24 21	7.1 24	4.39	28 1 8	5.6 7.8	33 25	14
	16	14	37	9.7	16	10	36	32	6.5	16	17
	23 31	12 53	30	9.7	26	7.8 12	30 28	25 109	7.1 8.4	17 16	12 9.7
Maxim		22	23 52	9.0 146	19 149	25	47	110	125	75 5.6	87
Minim			3.42	9.0	3.55	1.42	2.91	5.5	5.6	5.6	5.2

Mean Weekly Discharge in Million Gallons per day (continued)

(442)		mean we	зекту п	ischarge	נבא מב	lion Ga	allons I	er day	(contin	med)	
Week		7006	2000	7.00.0	7000	7010	2012	7.01.0	7010	7011	3016
Endin		1936	1937	1938		1940	1941	1942	1943	1944	1945
Jan.	7	56	114	17	21	3.23	23	29	43	23	28
	14	5 5 68	44	14	19	7.1	14	17	24	14	16
	21	68	63	12	18	8.4	16	21	40	23	14
	28	34	61	24	16	4.07	14	17	34	12	12
Feb.	4	40	46	17	83	3.88	11	20	34	9.0	7.1
1	11	36	41	14	72	12	9.0	30	50	23	8.4
	18	34	31	12	88	16	10	41	31	40	26
	25	26	35	16	40	17	7.8	29	22	30	43
Mar.	4	20	25	14	67	30	9.0	19	17	33	26
Mai .	11	17	20	23	54	22	18	52	17	31	21
	18		18	25	24	16	ו בל בל	1.0	26	2 L	16
		17		25	31	16	72	40		25	10
	25	28	16	21	22	<u>14</u>	15 15 18	43	48	64	18
Apr.	1	57	14	18	26	25	18	31	41	70	28
	8	84	28	22	23	28	30	23	23	32	25
	15	59	23	26	18	25	17	21	20	34	16
	22	30	17	18	18	57	14	12	49	27	52
	29	23	30	14	25	32	14	12	32	34	42
May	6	19	20	12	17	20	10	18	20	25	28
	13	15	16	10	14	15	11	11	48	20	21
	20	12	13	12	13	12	7.8	67	34	18	25
	27	9.7	12	19	13	9.7	7.1	57	43	15	17
June	3	7.8	10	52	17	9.0	6.1	23	26	1/4	12
	10	10	9.7	29	24	9.0	4.45	24	23	15	11
	17	12	11	16	15	25	4.72	26	22	12	9.0
	24	6.5	9.7	25	11	16	4.13	15	16	8.4	14
July	ì	4.78	7.8	19	9.0	9.0	5.4	12	40	6.3	7.8
J	8	6.5	6.5	14	9.0	9.7	23	9.0	36	7.1	7.1
	15	3.88	6.4	14	9.0	9.0	18	9.7	29	9.7	6.5
	22	8.4	5.7	28	7.8	20	25	9.0	19	6.5	8.4
	29	3.19	7.1	45	8.4	12	13	28	16	4.65	9.7
Aug.	5	16	5.8	33	6.5	7.8	19	15	12	9.0	10
1146	12	12	9.7	25	5.6	37	16	13	19	5 2	7.8
	19	9.0	11	21	31	151	11	26	12	5.2 5.1	5.9
	26	7.U	15	13	15	26	10	20	7.8	3.88	5.7
Sont		6.5	28							2.00	6.0
Sept.	2	8.4	28 3E	11	9.7	96	7.8 £.0	12	6.1	5.2	4.33
	16	6.4	35	12	7.1	30 18	5.9	26 15	5.4	3.23	17
		5.2	23	9.7	5 .7	18	4.84	15	4.20	7.8	30
	23	8.4	12	7.1	5.8 5.4	14	3.94	10	10	7.1	33
Oot	30	21	9.7	7.1		12	4.13	28	4.91	11	14
Oct	7	16	18	5.7	5.7	9.0	3.23	14	4.26	7.8	13
	14	49	12	4.78	3.94	7.8	3.00	12	4.20	5.7	9.7
	21	103	75	4.39	3.62	7.1	3.55	9.7	4.91	8.4	8.4
	28	28	37	4.20	3.49	6.2	6.4	9.7	5.5	7.1	21
Nov.	4	18	23	4.52	3.62	15	10	9.7	4.59	5.3 5.6 5.1	11
	11	17	16	21	3.55	9.0	6.5	8.4	14	5.6	9.7
	18	16	16	7.8	3.17	14	4.72	7.1	5.9	5.1	17
_	25	12	12	18	4.59	7.8	7.8	9.0	4.91	7.1	28
Dec.	2	11	19	9.7	4.07	11	6.1	14	4.46	20	17
	9	31	14	9.0	3.42	7.8	37	26	4.52	14	25
	16	23	11	8.4	3.36	19	17	17	4.07	11	23
	23	21	19	7.8	3.94	18	23	14	4.01	9.0	17
	31	_56	21	15	_ 5.6	43	39	104	15	11	36 52
Maxim		103	114	52	88	151	39	104	50	70	52
Minim	um	3.19	5.7	4.20	3.17	3.23	3.00	7.1	4.01	3.23	4.33

Location. Water-stage recorder, lat. 35°23°45°, long. 82°35°25°, at ford 1½ miles downstream from confluence of North and South Forks, 2 miles upstream from village of Mills River, Henderson County, and 4½ miles northwest of Horseshoe. Datum of gage is 2,088.47 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 66.7 square miles.

Records available .- September 1924 to September 1926, May 1934 to December 1945.

Average discharge - 12 years, 99.3 million gallons per day.

Extremes. Maximum discharge, 6,500 million gallons per day Aug. 30, 1940, (gage height, 13.62), from rating curve extended above 1,680 million gallons per day on basis of studies by Tennessee Valley Authority; minimum, 10 million gallons per day Dec. 24, 1943 (gage height, 1,33 feet), result of low temperature.

Remarks. The city of Hendersonville diverted from tributaries, for water supply, an average of 1.16 million gallons per day.

	· _				3.7	-	* -		G .	0 1		6	Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TWO THAT SHEET IN THE PERSON IN		Dec.	Mean
1924									85.3	60.7	43.9	100	
1925	160	102	88.5	71.1	70.4	42.0	31.5	16.4	14.7	20.8	42.3	31.3	57.4
1926	101	103	96.9	112	58.0	38.2	37.0	40.5	45.9	000 ees can dag can			
1934		DESCRIPTION OF THE PARTY OF	GD GDC DW SRV GDC	(20) ess (200 nm nm 000)	77.5	138	95.0	66.5	74.9	102	89.1	107	
1935	232	131	131	125	98.2	62.1	66.5	110	74.9	40.2	77.5	59.3	101
1936	235	165	148	268	101	58.4	49.5	73.0	49.4	218	92.4	146	134
1937	345	210	123	138	104	84.0	59.0	80.1	115	162	94.3	80.8	
1938	85.9	76.2	106	101	91.1	123	128	101	58.5	35.9	64.3	51.7	85.3
1939	105	289	194	120	89.1	85.3	52.3	88 .5	43.2	27.3	25.8	26.3	94.3
1940	34.0	67.2	85.3	142	69.8	53.7	53.6	327	137	55.2	64.1	90.4	98.2
1941	84.0	57.4	87.2	105	59.2	41.9	132	106	42.4	32 .4	43.4	103	74.9
1942	91.7	133	176	98.2	187	125	91.7	111	131	77.5	60.7	177	122
1943	188	174	163	163	171	133	159	78.8	47.0	35.1	41.3	38.3	116
1944	69.8	119	196	187	116	74.3	48.6			39.9	41.0	50.8	85.3
1945	66.5	98.8	102	142	110	60.7	61.6	55.2	120	76.2	81.4	129	91.7
Max.	345	289	196	268	187	138	159	327	137	218	94.3		134
Min.	34.0	57.4	85.3	71.1	58.0	38.2	31.5	16.4	14.7	20.8	25.8	26.3	57.4
Mean	138	133	131	136	100	0.08	76.1	92.4	71.9	70.2	61.5	85.1	99.3

Maximum Discharge in Million Gallons per day

						_		_					Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		Nov.	Dec.	Max.
1924									333	135	66	475	
1925	333	160	216	96	205	56	63	20	24	58	218	72	333
1926	1120	220	208	276	76	49	186	76	136				
1934					107	372	155	99	184	290	218	270	*****
1935	1140	207	314	287	127	90	127	455	217	114	346	. 118	1140
1936	814	456	417	833	150	91	201	144	359	1470	132	736	1470
1937	879	318	154	295	133	129	108	179	305	1010	123	121	1010
1938	168	99	216	163	375	267	324	182	103	44	225	129	375
1939	672	531	373	194	112	177	83	769	63	51	39	48	769
1940	135	146	160	399	110	149	196	2890	373	72	137	340	2890
1941	128	81	132	256	82	67	323	382	57	76	134	317	382
1942	165	394	528	127	879	197	185	239	337	110	85	1190	1190
1943	390	304	310	501	452	368	283	136	113	58	157	162	501
1944	226	313	523	277	191	110	90	81	153	81	136	103	523
1945	169	344	234	358	200	116	89	155	371	205	182	310	371
Max.	1140	531	528	833	879	372	324	2890	373	1470	346	1190	2890
Min.	128	81	132	96	76	49	63	20	24	44	39	48	333
Mean	488	275	291	312	228	160	172	415	209	270	157	314	913

			MITIII	בע ווטווו.	Schare	e III M	T T T T O11	Gallo	ns per	day			
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1924 1925	81	83	67	58	52	3 0	19	14	36 13	45 14	40 19	33 23	13
1926	31	59	67	70	43	30	1 6	25	26		=====		යක යන දැන දැනය
1934 1935	87	106	98	92	63 76	78 47	68 45	50 38	42 41	60 32	60 35	74 45	32
1936	52	116	89	136	67	36	30	40	29	57	70	70	29
1937	206	163	96	88	83	61	48	47	57	56	74	61	47
1938	62	66	68	7 4	59	77	61	61	42	32	32	37	32
1939	51	163	1.20	93	75	50	35	38	32	21	23	20	20
1940	19	30	56	72	47	34	30	3 0	70	46	49	لېل	19
1941	67	49	46	72	45	29	38	57	32	25	31	34	25
1942	65	84	97	78	76	81	59	76	72	64	52	68	52
1943	110	115	99	107	112	7 9	94	57	35	31	31	21	21
1944	45	40	94	143	78	47	36	28	25	30	29	40	25
1945		34	71	71	69	48	45	32	33	53	56	72	32
Max.	206	163	120	143	112	81	94	76	72	64	74	74	52
Min.	19	30	46	58	43	29	16	14	13	14	19	20	13
Mean	70 -	85	82	89	68	52	45	42	39	40	43	46	29

Ending 1924 1925 1926 1934 1935 1936 1937 1938 1939 1940 1941 Jan. 7 116 37 105 250 541 89 83 22 110 14 150 48 147 242 246 78 82 42 77 21 233 242 165 313 310 67 83 47 83 28 156 82 243 184 313 108 70 28 74 Feb. 4 108 112 143 169 253 88 322 30 65 11 107 90 117 180 234 73 291 59 57 18 112 68 162 177 197 68 355 70 62 25 96 116 118 142 202 84 </th <th>Week</th> <th></th> <th></th> <th></th> <th>weekly</th> <th>1</th> <th></th> <th>1</th> <th></th> <th></th> <th></th> <th>,</th> <th></th> <th></th>	Week				weekly	1		1				,		
Jan. 7		g	192և	1925	1926		1934	1935	1936	1937	1938	1939	1940	1941
1h														
21	•													
28		21						165						83
Feb. h				156				243					28	711
25	Feb.													65
25		11			90			117		234			59	57
25		18			68			162		197	68	355	70	62
11				96						202	84			52
18	Mar.			84									102	54
25				76	124	1							87	96
Apr. 1 81 91 106 281 99 102 135 98 103 155 75 158 116 116 116 113 116 129 125 109 158 120 155 75 158 111 315 136 123 108 116 101 122 26 67 103 1140 188 106 97 108 208 83 29 64 78 131 156 176 81 135 115 83 134 156 176 81 135 115 83 134 156 176 81 135 115 83 134 156 176 81 135 115 83 115 126 74 104 97 67 120 98 61 87 111 97 103 73 84 63 56 56 127 76 147 72 97 80 92 83 80 56 54 110 10 147 37 181 71 72 87 132 120 15 13 17 143 140 112 64 66 69 85 79 74 18 18 17 17 28 77 132 120 15 13 17 143 140 112 64 66 69 85 79 74 18 18 171 72 87 132 120 15 13 15 15 34 12 22 98 58 36 56 78 51 18 115 15 54 18 18 11 15 15 54 18 18 11 15 15 54 18 18 11 15 15 54 18 18 11 15 15 54 18 18 11 15 15 54 18 18 11 15 15 54 18 18 11 15 15 54 18 18 11 15 15 54 18 18 11 15 15 54 18 18 11 15 15 54 18 18 11 15 15 54 18 18 11 15 15 54 18 18 11 15 15 54 18 115 15 15 18 18 11 15 15 15 18 18 11 15 15 18 18 11 15 15 18 18 11 15 15 18 18 11 15 15 18 18 11 15 15 18 18 11 15 15 18 18 11 15 15 18 18 11 15 15 18 18 11 15 15 18 18 11 15 15 18 18 11 15 15 18 18 11 15 15 18 18 11 15 15 18 18 11 15 15 18 18 11 15 15 18 18 11 15 15 18 18 18 11 15 15 18 18 18 11 15 15 18 18 18 11 15 15 18 18 18 11 15 15 18 18 18 11 15 15 18 18 18 11 15 15 18 18 18 11 15 15 18 18 18 11 15 15 18 18 18 11 15 15 18 18 18 11 15 15 18 18 18 18 18 18 18 18 18 18 18 18 18		18		76				205						87
B					79	· .								
15	Apr.	, T										135		103
22														158
29		72		12	100				188 2T2	106	123			101
May 6 57 65 100 135 126 74 104 97 67 13 56 67 99 114 106 63 82 78 68 20 98 61 87 111 97 103 73 84 63 56 27 76 47 72 97 80 92 83 80 56 54 June 3 56 45 83 78 67 95 215 106 50 47 10 17 37 181 71 72 87 132 120 15 13 17 43 40 142 64 66 90 85 79 74 48 24 38 41 151 55 49 85 120 65 59 34 July 1 35 32 99 48 41 65 107 56 38 39 8 43 41 101 55 54 58 74 52 41 143 15 34 22 98 58 36 56 78 51 48 145 22 28 17 91 87 49 54 158 50 86 181 29 24 41 85 74 36 61 211 55 48 90 Aug. 5 19 83 92 49 109 61 145 48 33 143 19 16 37 61 101 61 87 98 74 704 91 26 15 39 60 239 47 80 72 94 118 74 Sept. 2 14 27 57 84 44 174 77 49 200 51 16 37 15 50 78 76 34 132 62 42 123 43 23 67 13 33 83 55 46 80 48 42 92 37 30 157 17 38 90 46 79 63 47 35 77 35 Oct. 7 88 17 118 38 78 96 41 37 54 30 Nov. 4 48 22 88 50 105 125 32 25 58 36 14 48 21 85 36 46 80 77 81 31 52 42 Dec. 2 39 26 153 89 76 114 67 47 23 72 68 31 85 27 83 44 82 97 77 35 77 35 88 146 105 30 89 76 114 67 47 23 72 68 31 85 27 88 137 146 554 139 76 47 23 72 68 31 85 27 83 44 46 554 139 76 47 23 72 68 31 85 27 83 44 46 554 139 76 47 23 72 68 31 85 27 83 44 46 554 139 76 47 23 72 68 31 85 27 83 44 44 46 554 139 76 47 23 72 68 31 85 27 83 44 44 46 554 139 76 47 23 72 68 31 85 27 88 44 44 45 44 45 45 45		20		61,	78			13)			81			82
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10				76					80		83		56	54
10	June	3		56	45		83	78		95			50	47
24		10		47	37		181	71	72	87	132		45	43
24				43			142						74	48
8				38	41			55		85			59	34
15	July	ļ		35	32		99	48				56		39
22		- 8		43	41		101	55	54	58	74	52	41	143
29		15		34	22		98	58	36	56		51	48	145
Aug. 5				28			97			54	158	50		
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23 67 13 33 83 55 46 80 48 42 92 37 30 157 17 38 90 46 79 63 47 35 77 35 35 35 35 36 46 31 37 64 30 30 31 35 36 46 317 34 23 51 29 28 54 30 65 38 145 178 34 22 47 40 40 48 22 88 50 105 125 32 25 81 56 31 42 87 65 152 103 94 45 23 69 34 25 46 29 85 64 80 77 81 31 52 42 42 42 43 43 43 44 45 45 45 45		16	37				78					42		
30 157 17 38 90 46 79 63 47 35 77 35 Oct. 7 88 17 118 38 78 96 41 37 64 30 14 57 15 158 37 229 70 36 28 57 28 21 48 21 85 36 468 317 34 23 51 29 28 54 30 65 38 145 178 34 22 47 40 Nov. 4 48 22 88 50 105 125 32 25 81 56 11 44 32 83 48 102 98 94 25 54 43 18 42 87 65 152 103 94 45 23 69 34 25 46			67	13			83	55	46	80	48	42		37
14 57 15 158 37 229 70 36 28 57 28 21 48 21 85 36 468 317 34 23 51 29 28 54 30 65 38 145 178 34 22 47 40 Nov. 4 48 22 88 50 105 125 32 25 81 56 11 44 32 83 48 102 98 94 25 54 43 18 42 87 65 152 103 94 45 23 69 34 25 46 29 85 64 80 77 81 31 52 42 Dec. 2 39 26 153 65 73 94 52 25 58 36 9 165 38 136 54 139 76 47 23 47 125 16			157	17	38			46		63	47	. 35		35
28 54 30 65 38 145 178 34 22 47 40 Nov. 4 48 22 88 50 105 125 32 25 81 56 11 44 32 83 48 102 98 94 25 54 43 18 42 87 65 152 103 94 45 23 69 34 25 46 29 85 64 80 77 81 31 52 42 Dec. 2 39 26 153 65 73 94 52 25 58 36 9 165 38 136 54 139 76 47 23 47 125 16 105 30 89 76 114 67 47 23 72 68 23 67 33 89 59 119 82 39 25 82 78 31 85 27 </td <td>Oct.</td> <td></td> <td>88</td> <td></td> <td></td> <td></td> <td>118</td> <td></td> <td></td> <td></td> <td></td> <td>37</td> <td></td> <td>30</td>	Oct.		88				118					37		30
28 54 30 65 38 145 178 34 22 47 40 Nov. 4 48 22 88 50 105 125 32 25 81 56 11 44 32 83 48 102 98 94 25 54 43 18 42 87 65 152 103 94 45 23 69 34 25 46 29 85 64 80 77 81 31 52 42 Dec. 2 39 26 153 65 73 94 52 25 58 36 9 165 38 136 54 139 76 47 23 47 125 16 105 30 89 76 114 67 47 23 72 68 23 67 33 89 59 119 82 39 25 82 78 31 85 27 </td <td></td> <td></td> <td>57</td> <td>15</td> <td></td> <td></td> <td>158</td> <td>37</td> <td>229</td> <td>70</td> <td>36</td> <td>28</td> <td>57</td> <td>28</td>			57	15			158	37	229	70	36	28	57	28
Nov. 4 48 22 88 50 105 125 32 25 81 56 83 48 102 98 94 25 54 43 18 42 87 65 152 103 94 45 23 69 34 25 46 29 85 64 80 77 81 31 52 42 Dec. 2 39 26 153 65 73 94 52 25 58 36 9 165 38 136 54 139 76 47 23 47 125 16 105 30 89 76 114 67 47 23 72 68 23 67 33 89 59 119 82 39 25 82 78 31 85 27 83 48 220 97 72 34 161 152 Maximum 233 447 468 541 215 355 704 181			48				85	36	468	317	34	23	51	29
11 44 32 83 48 102 98 94 25 54 43 18 42 87 65 152 103 94 45 23 69 34 25 46 29 85 64 80 77 81 31 52 42 85	M		54											40
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Maximum 233 447 468 541 215 355 704 181				27			83	48			72	34		152
	Maxim	um		233								355		181
	Minim	um		13				36	34	54	32	22	22	28

Tara ala			1	Mean	Weekly	DISCHA.	rge II	1 1817 7 7	1011	Ua.L.	rons t	i day	T	
Week		7010	7012	7011	3015								*	
Endin		1942	1943	1944	1945		 	<u> </u>						
Jan.	7	119	215	98	100									
	14	74	136	54	65									
	21	90	198	85	59	1						1		
	28	81	187	53	52									
Feb.	4	95	197	43	41									
	11	127	233	71	44									
	18	167	176	146	89	1						1		
	25	141	136	146	185							1	1	
Mar.	4	100	112	153	121				+					
mai .	11	238	110	135	96	<u> </u>								
	18	185	137	110	76									
	25	175	233	270	87								1	
Ann	1	145	202	323	141	 	· · · · · · · · · · · · · · · · · · ·	 	+					
Apr.	8	113	138	193	126									
				106	220								E	
	15	107	121	196	81									
	22	89	221	161	178									
76	29	82	176	189	185				-				-	-
May	6	115	130	149	146								Ì	
	13	84	234	125	109								1	
	20	268	169	116	126									
	27	279	167	96	91			ļ					ļ	
June	3	157	127	85	70						}		1	
	10	137	110	94	63	{					ł			
	17	158	127	81	57			•						
	24	106	99	65	69									
July	1	87	227	50	52								1	
	8	77	227	52	61	1		1						1
	15	79	187	56	61									
	22	70	123	48	57						Ì			
	29	136	99	38	63									
Aug.	5	98	85	56	85									
	12	95	94	40	63									
	19	147	95	40	47	}					İ			
	26	121	61	32	48				ĺ					
Sept.		85	57	36	39			1						
	9	177	50	27	81									
	16	127	38	43	125									
	23	87	50 38 59	40	196									
	30	147	39	50	97			ļ						
Oct.	7	95	39 35	45	97 84		-		1					
	14	78	32	36	67									
	21	70	32 36	44	59									
	28	72	37	39	98									
Nov.	4	68	34	32	66							 		
1.0.	11	62	66	32	59									
	18	56	37	30	75									
	25	61	33	37	116									
Dec.	25 2	72	31	74	85				-			-		
1200.	9	123	30	57	131									
	16	91	27	50	115			·						
	23	75	26	45	84									
	31	408	67	50	190									
Maxim		408											 	
Minim		56	234 26	323 27	196									
[milii]	uili	50	1 20	1 41	39								L	<u> </u>

Location (revised).- Water-stage recorder, lat. 35°22'52", long. 82°29'54", at bridge on old Asheville-Hendersonville highway, 100 feet downstream from Byers Creek, 0.8 mile south of Naples, Henderson County, and 2.2 miles upstream from mouth. Datum of gage is 2,047.48 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 109 square miles.

Records available .- May to December 1907, September 1938 to December 1945.

Extremes. - Maximum discharge, 7,000 million gallons per day Aug. 13, 1940 (gage height, 13.07 feet); minimum, 19 million gallons per day Sept. 17, Oct. 15, 28, Dec. 6, 1907.

Floods of July 1916 and August 1928 reached stages of 21 feet and 15 feet, respectively, from information by Tennessee Valley Authority.

Remarks. - Several small artificial ponds may produce slight regulation. Mud Creek received sewage from city of Hendersonville, which diverts its water supply from tributaries of Mills River.

				Mean	JISCHai	ge III	MTTTT,	JII Gall	ons pe	si day			
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Mean
1907					119	127	66.5	61.0	61.0	40.2	128	304	
1938 1939 1940	135 61.9	340 125	233 88.5	118	95.6 65.9	82.7 80.1	65.9 68.5		53.4 52.1	42.4 39.0 58.0	38.2	41.9	
1941 1942 1943 1944 1945	109 94.3 227 124 84.0	79.5 163 171 195 155	114 235 193 273 145	119 96.3 169 182 136	60.3 284 136 107 104	53.0 136 147 87.2 62.2	163 78.2 258 62.5 93.7	114 84.6 99.5 45.6 89.1	45.5 159 73.6 48.2 183	41.7 70.4 57.9 93.0 85.9	56.4 65.2 79.5 80.1 91.7	123 233 76.2 87.2 216	89.8 141 141 115 120
Max. Min. Mean	227 61.9 119	340 79.5 176	273 88.5 183	182 96.3 134	284 60.3 121	1 1 1			183 45.5 88.3	93.0 39.0 58.7	38.2	1	141 89.8 120

Mud Creek at Naples, N. C.

Maximum Discharge in Million Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Max.
1907					317	355	111	88	329	61	588	911	
1938 1939 1940	672 293	814 593	756 11 ₄ 1	238 432	169 111	208 300	141 337	691 3200	67 106 704	49 56 171	229 47 155	245 97 801	814 3200
1941 1942 1943 1944 1945	203 161 814 464 140	142 904 464 448 519	229 1470 540 782 614	364 131 608 267 238	97 2490 418 172 251	112 570 827 183 83	470 111 762 98 173	465 163 169 73 186	59 698 191 187 859	94 98 82 457 217	158 90 305 191 191	420 1600 292 226 614	470 2490 827 782 859
Max. Min. Mean	672 140 392	904 142 555	1470 141 647	608 131 325	2490 97 503	827 83 330	762 98 275	3200 73 629	859 59 356	457 49 143	588 47 217	1600 97 578	3200 470 1349

			**************************************	IL DISC	large.	-11 21-1-1	LTOIT G	TTT0112	per de	- y			
													Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Min.
1907					78	78	53	24	19	19	24	19	
1938 1939 1940	70 32	148 48	123 66	86 68	7 8 50	49 46	44 39	47 42	45 41 59	40 34 48	40 36 64	49 35 56	34 32
1941 1942	81 68	67 78	70 90	79 7 8	43 74	39 81	54 61	58 58	37 63	33 61	43 58	45 67	33 58
1943	101	104	95	101	97	68	101	70	54	52	55	47	47
1944	70	56	127	144	80	56	44	34	35	46	54	68	34
1945	61	52	86	83	68	52	52	54	52	67	69	83	52
Max.	101	148	127	144	97	81	101	70	63	67	69	83	58
Min.	32	48	66	68	43	39	39	24	19	19	24	19	32
Mean	69.0	79.0	93.9	91.3	71.0	58.0	56.0	48.4	45.0	44.4	49.2	52.1	41.4

Mud Creek at Naples, N. C.

Week Endin	ď	1907		1938	1939	1940	1941	1942	1943	1944	1945
Jan.	7	1 - 701		1,00	115	38	150	121	185	194	F
0	14				119	82	90	78	116	92	101 87 83 74 59 63 189 272
	21		No.		109	92	114	87	291	148	83
	28		İ		81	43	92	86	275	83	71
Feb.	4	1			353	49	79	95	241	68	59
•	11	1			373	87	72	135	267	112	63
	18				393	129	72 95	135 280	150	294	189
	25				393 176	220	76	141	120	188	272
Mar.	4		The state of the s		514	97	76	95	104	233	140
	11				324	82	144 93	481	124	209	112 90
	18				181	87	93	193	177	1 50	90
	25				137	8 <u>3</u> 97	99	191	317	364	131
Apr.	25 1 8 15 22				135	97	99 143	141	199	435	131 253 143 92 126
	8		1		1.24	97 92 169	191 106 89	108 105 88	127	177	143
	15				101	92	106	105	118	174	92
	22		2		101	169	89	88	278	170	126
	29				145	121	97	82	159	203	183
May	6		Table de la constant		92	76	74	91	112	134	132
	13	128		7	108	76 61	72	80	189	112	101
	20	81			101	61	57	483	143	98	130
	27	131			85	57 54 65 132	49 51 48 66	531	119	99	81 68 67 59 66 53 74 96 85
June	3 1 0	177			131	54	り上	132	95	90	68
	10	151			108	לס	40	134	111	105	0(
	17 24	109			67	77	1, 2	218	127 87	87	59 66
July	- 24	98 96			59 53 86	77 52 49	<u>43</u> 59	109 88	353	94	<u> </u>
oury	1 8	81			86	1,0	198	83	322	65	71,
	זב	57			60	70	215	78	413	79	96
	15 22	61			55	120	179	65	171	61	85
	29	57			66	47	92	87	122	48	111
Aug.	5	57 64 57 73			61	56	109	64	103	56	133
	12	68			88	81	82	85	116	45	81
	19	63			245	1090	82 65	99	116	46	98
	26	62			121	109	228	81	81	37	80
Sept.	2	33			68	827	6 6	101	79	46	80 61
•	9	49			53 46	140	52 45	309 127	70	39 47	145
	9 16	45		61	46	85	45	127	56	47	145
	23	70		50 50	59	68	40	75	101	42	377
	30	89		50	47	63	41	132	66	65	99
Oct.	7	48		45	47	56	37	79	57	68	90
	14	48		42	37 37	51 57 50	34 41	70	54 56	55 163	74
	21	32		41	37	57	41	67	56	163	71
N7	28	34		42	36	50	50	70	61	98	111
Nov.	4	31		41	36	110	76 55	69 65	59 132	83	78 78
	11	50		93	36	74	55 44	65	132	64 57	78 87
	18	77		53	39	91 67	44	61 66	70 61	57 68	0/ 111.
Doo	25 2 9	32 1 98		99 64	<u>41</u>	73	52 50	75	59	127	114 93 274
Dec.	2			<u>ς</u> υ Ω1		て	50 160	168	77 62	107	27) 27)
	1 6	79 521		58 57	36	58 88	78	98	63 59	89	123
	23	52 1 297		51	37 38	1 08	97	72	50	74	101
	23 31	383		119	56	315	172	583	131	78	380
Maxim		707		⊥ ⊥2	514	1090	228	583	413	435	380
					36	38	34	61	50	37	53
Minim	ium	1			30	30	24	0.1	50) [22

Cane Creek at Fletcher, N. C.

Location. - Water-stage recorder, lat. 35°26'08", long. 82°29'23", at county highway bridge, 0.5 mile upstream from Hooper Creek, half a mile northeast of Fletcher, Henderson County, and 0.8 mile downstream from county line. Datum of gage is 2,072.22 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 63.1 square miles.

Records available. - October 1942 to December 1945.

Extremes. Maximum discharge, 1180 million gallons per day Jan. 19, 1942 (gage height, 7.97 feet), from rating curve extended above 549 million gallons per day by logarithmic plotting; minimum 15 million gallons per day Sept. 10, 11, 1944 (gage height, 0.43 foot).

Remarks: - Records good except those for periods of ice effect or no gage-height record, which are fair.

Mean Discharge in Million Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Mean
1942 1943 1944 1945	35.3	72.4 76.9 57.5	78.2 98.2 58.1		54.2 46.4 47.2	41.1 32.4 28.7	71.7 26.6 31.3	30.2 24.7 27.1	20.6 21.8 55.6	25.1 20.3 31.8 37.2	21.7 23.8 25.3 42.4	71.7 21.3 29.6 84.0	49.7 43.6 46.4
Max. Min. Mean	101 33.3 56.5	76.9 57.5 68.9	98.2 58.1 78.2	55.7	54.2 46.4 49.3	41.1 28.7 34.1	71.7 26.6 43.2	30.2 24.7 27.3	55.6 20.6 32.7	37.2 20.3 28.6	42.4 23.8 29.1	84.0 21.3 51.7	49.7 43.6 46.6

Maximum Discharge in Million Gallons per day

			1										Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Max.
1942										34	57	519	519
1943	499	170	268	170	154	107	166	54	56	29	85	53	499
1944	121	205	317	160	74	63	62	93	118	220	50	56	317
1945	70	200	222	138	142	47	75	94	297	97	98	295	297
Max.	499	205	317	170	154	107	166	94	297	220	98	519	519
Min.	70 .	170	222	138	74	47	62	54	56	29	50	53	297
Mean	230	192	269	156	123	72.3	101	80.3	157	95.0	72.5	231	371

	1	·											Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov。	Dec.	Min.
1942										22	21	31	
1943	33	45	41	47	37	27	38	21	16	18	18	16	16
1944	22	22	41	56	35	21	19	15	15	17	21	23	15
1945	23	21	36	36	_30	20	20	19	19	26	28	37	19
Max.	33	45	41	56	37	27	38	21	19	26	28	37	19
Min.	22	21	36	36	30	20	19	15	15	17	18	16	15
Mean	26.0	29.3	39.3	46.3	34.0	22.7	25.7	18.3	17.0	20.8	22.0	26.8	17.0

Cane Creek at Fletcher, N. C.

Mean Weekly Discharge in Million Gallons per day

Wee	k		- June	weekiy i	rscuarg	6 111	MILLION	ı ual	tons per	day		
End:		1942	1943	1944	1945							
Jan			61	45	43						_	
	14 21		37 167	28 47	32 32							
	28		167	47	32							
Feb.	. 4	 	129 96	26	29							
			106	10	24		İ					
	11 18 25		66	40	69							
1	25		53	74	95					İ		
Mar.			66 53 45 45 68	74 94	28 69 95 56 47 37 48				 			
	11		45	73 48	47		İ					
	18 25	1		48	37				1			
Apr.		 	138	111	48							
122	8	İ	77	185	102							
	15	1	57 53	69 96 64	1 38	1						
ĺ	22		80	611	65							
-	2 9		63	74	67							
May	6		63 48	74 56	52 38 65 67 54 43 63							
	13 20		73 57	47	43							
	27		57	39	63							
June	3		48	47	39 30							
	10		3),	35	30							
	17 24		47	29	32 30							
-	24		37 34 47 34 54	34	30							
July	1 8 15 22		54	35 29 34 25 25 28	30 22					1		
	ו ט		90 105	25	37	Party Control						
	22		105	28	35							
	29		58 45	33	27 28							
Aug.	29 5		38	40	32							
	12		38 39 30 24	23	25			}				
	19		30	22	24							
Som +	26		24	17	34 24			-				
Sept.			23	21	24							
	9		19 17	17 18	36 46			.				
	23		27	18	114			1			İ	
	30		20	34	34			l				
Oct.	7	28	18	22	43					 		
	14	26	19	22 55	32 29							
	21 28	23	21	55	29							
Nov.	4	25 30	23 22	32	47							
	11	25	36	23 22	32 28							
	18	23	21	22	36							
	25 2 9	23	19	24	68							
Dec.	2	29	19	37	68 42							
	76	57 39	19	33	107							
	16 23	39	18	30	58							
	31	153	19 29	26 29	43 134							
Maxim	ım	-//	167	185	134							
Minim	ım		17	17	22							
						62						

62

Hominy Creek at Candler, N. C.

Location. Water-stage recorder, lat. 35°32'28", long. 82°40'35", O.l mile downstream from Pole Creek and 1 mile east of Candler, Buncombe County. Datum of gage is 2,065.83 feet above mean sea leve, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 80.5 square miles.

Records available .- October 1942 to December 1945.

Extremes. - Maximum discharge, 982 million gallons per day June 28, 1943 (gage height, 4.51 feet); minimum 9.7 million gallons per day Nov. 8, 1944; minimum gage height, 0.83 foot Nov. 25, 1942, Sept. 28, Nov. 8, 1944.

Remarks .- Diurnal fluctuation during low flow caused by small mill above station.

Mean Discharge in Million Gallons per day

													Yearly	
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean	
1942										31.9	27.3	72.4		
1943	78.8	78.8	89.8	89.8	70.4	67.2	93.7	42.6	27.1	23.4	26.3	24.2	59.2	
1944	36.1	75.6	100	78.2	52.8	35.9	29.7	23.2	21.8	23.8	22.3	28.6	43.9	
1945	35.2	57.4	50.5	74.3	57.1	36.2	35.0	23.4	47.0	34.7	39.3	72.4	46.8	
Max.	78.8	78.8	100	89.8	70.4	67.2	93.7	42.6	47.0	34.7	39.3	72.4	59.2	
Min.	35.2	57.4	50.5	74.3	52.8	35.9	29.7	23.2	21.8	23.4	22.3	24.2	43.9	
Mean	50.0	70.6	80.1	80.8	60.1	46.4	52.8	29.7	32.0	28.5	28.8	49.4	50.0	

Maximum Discharge in Million Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Max.
1942 1943 1944 1945	242 134 77	160 211 130	276 315 116	328 129 280	121 91 97	285 56 69	224 112 103	112 45 50	49 91 186	38 39 79 129	42 63 48 78	472 50 58 164	472 328 315 280
Max. Min. Mean	242 77 151	211 130 167	315 116 236	328 129 246	121 91 103	285 56 137	224 103 146	112 45 69.0	186 49 109	129 38 95.0	78 42 57.8	472 50 186	472 280 308

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1942 1943 1944 1945	43 23 26	52 24 25	47 52 34	58 59 37	51. 39 36	36 25 25	49 18 21	29 17 13	23 15 14	28 21 18 23	25 23 18 26	29 19 24 35	19 15 13
Max. Min. Mean	43 23 30.7	52 24 33.7	52 34 44.3	59 37 51.3	51 36 42.0	36 25 28.7	49 18 29.3	29 13 19.7	23 14 17.3	28 18 22.5	26 18 23.0	35** 19 26.8	19 13 15.7

Hominy Creek at Candler, N. C.

Week					301 L			1		ĺ
Endin		1942	1943	1944	1945					
Jan.	7 14		76 50	50 30 42 28 25	48 33					
	21		50 78 93	<u>1</u> 2	33 34 30 26					
	28		93	28	30					
Feb.	4		98	25	26					
	11		110	46	27 80					
	11 18 25		76	46 101 80	80					
Mon	<u>25</u>		76 59 52 50 71 154	07	83 56 48 38 37 76					
Mar.	4		50	97 69 58 118	1 30					
	18		71	58	38					
4	25		154	118	37		Action Mark			
Apr.	11 18 25 1 8 15 22		103	176	76					
	8		70 65 136	87	58					
	15		65	85	40					
	22		130	68	88 TT3					
May	29 6 13 20		92 68 82 70	87 85 67 68 59 52 57 50 43 36 30 25 26 43 23 31 24 25 19	58 40 113 88 72 59 65 47 36 39 41 26 25 31 26					
	13		82	52	59					
	20		70	57	65					
	27		70 52 56 68 43	50	47					
June	3 10		52	43	36		-	:		
	17		68	36	39					
	24		43	30	41				1	
July	1		115 96 106 62	25	26					
	8		96	25	25					
	15		106	26	31					
	22		62 54	43	20	1				
Aug.	1 8 15 22 29 5		50	31	52 46					
1	12		47	24	26					
	19		53	25	26 19					
	26		34	19	19 1 6					
Sept.	26 9 16 23 30		50 47 53 34 30 26 25	19	16					
	76		20 25	16 20	37 43					
	23		37	22	80					
	30		31 26	30	35					
Oct.	7	35	23 22 23	23	35 35					
	14	32	22	21 30	28 26					
	21	31	23	30	26					
Nov.	28 4	35 32 31 31 28 26 26 26 30 41	26 24	23 19	52 30					
1100.	11	28	3),	19	28					
	18	26	25	19	35					
	11 18 25 2 9 16	26	34 25 24 23	22 33	28 35 59 40					
Dec.	2	30	23	33	40					
	76	41	24	32	84 65					
	23	3),	24 22 21	32 28 25	48					
	31	34 1 58	30	30	99					
Maxim	um		154	176	113					
Minim	um		21	16	16		<u> </u>	L		

Swannanoa River at Biltmore, N. C.

Location (revised).- Water-stage recorder and masonry control, lat. 35°34'06", long. 82°32'42", at Biltmore, Buncombe County, 100 feet downstream from Biltmore Avenue Bridge, 200 feet upstream from Southern Railway Bridge, and 1.6 miles upstream from mouth. Datum of gage is 1,976.58 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 130 square miles.

Records available .- December 1920 to September 1926, May 1934 to December 1945.

Average discharge. - 16 years, 101 million gallons per day.

Extremes.— Maximum discharge, 11,900 million gallons per day Aug. 13, 1940 (gage height, 19.00 feet), by computation of flow over dam 3 miles above station; minimum, .71 million gallons per day (regulated) Oct. 9, 14, 15, 1941; minimum daily, .78 million gallons per day (regulated) Oct. 14, 1941; minimum gage height, 0.65 foot July 17, 1936.

Maximum stage known, 21.5 feet July 1916, from floodmarks. Flood of Aug. 16, 1928, reached a stage of 18.74 feet, from floodmarks. Extremely high stages

subject to backwater from French Broad River.

Remarks. - Occasional large diurnal fluctuation and regulation from Lake Craig in recreation park 3 miles above station. City of Asheville diverts its water supply above this station from Beetree Reservoir (capacity, 700,000,000 gallons) and North Fork Swannanoa River.

	_				101 80 1							_	Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.		Mean
1920												166	
1921	135	260	121	176	172	118	93.0	73.6		46.0	85.9	85.3	117
1922	132	176	228	193	172	115	85.3	48.0		51.7	36.3	96.9	114
1923	132	157	214	132	280	149	91.7	59.1			52.4	87.9	122
1924	181	114	160	162	121	76.2	114	42.1	88.5	65.9	60.7	122	109
1925	172	92.4	95.0	71.1	89.8	29.6		15.4	15.5	23.3	41.3	30.6	58.1
1926	106	92.4	80.8	80.1	47.9	28.6	55.4	32.6	30.6				
1934				OR ST ST	54.4	136	77.5	50.1	43.2	73.6	106	109	
1935	181	100	186	195	89.8	44.9	48.8	78.2	89.8	27.4	93.7	52.3	98.8
1936	307	218	307	362	94.3	51.6	41.0	66.5	66.5	212	74.3		161
1937	375	198	121	130	88.5	50.7	44.8	64.1	78.8	129	75.6	73.0	119
1938	84.6	105	174	95.0	73.0	80.8	93.7	93.0	48.3	24.0	69.8	51.9	82.7
1939	105	304	201	125	87.2	63.9	50.8	77.5	30.2	20.2	19.9	24.3	
1940	29.7	64.0	100	132	46.9	46.1	43.2	535	113	37.0	49.1	93.7	108
1941	81.4	43.5	74.3	78.8	35.5	19.8	167	51.5	24.3	11.5			55.2
1942	52.2	119	194	70.4	122	114	51.0	63.0	79.5	39.7	34.6	154	91.1
1943	182	176	161	147	129	84.0	162	51.9	27.8			31.6	100
1944	62.1	149	200	171	91.1	42.3	36.7			80.1	49.2		
1945	103	140	143	152	134	78.8	42.0			96.9	96.3	165	108
Max.	375	304	307	362	280	149	167	535	113	212	106		161
Min.	29.7	43.5	74.3	70.4	35.5	19.8	21.8	15.4	15.5	11.5	19.9	24.3	55.2
Mean	142	148	162	145	107	73.9	73.3	83.1		59.0			101

Swannanoa River at Biltmore, N. C.

Maximum Discharge in Million Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Max.
1920												911	
1921	284	1090	245	853	420	355	271	141	311	141	141	164	1090
1922	801	749	491	491	341	355	222	75	59	176	41	420	801
1923	853	455	749	341	1830	404	284	113	234	68	81	164	1830
1924	943	245	281	271	199	141	470	73	527	211	211	898	943
1925	491	141	341	164	187	56	48	18	47	87	187	48	491
1926	1170	199	199	187	104	129	698	118	57		000 DECIME 000 CIN	000 000 mm 000 000	co co co co co
1934	and the same of th	<u>പം താരം അത്ര</u>	<u>ат</u> сапананан эм		126	456	183	107	107	343	486	479	00000 000 COO COO
1935	1100	221	652	526	123	76	105	315	457	84	782	87	1100
1936	1620	840	1210	1380	151	118	111	205	559	1540	113	489	1620
1937	1150	303	176	296	208	85	103	355	300	775	121	205	1150
1938	167	161	417	140	159	159	380	382	293	28	211	138	417
1939	672	717	578	219	152	148	116	659	54	83	28	34	717
1940	61	189	194	717	84	200	85	4880	437	79	140	672	4880
1941	159	61	140	177	48	44	454	107	50	25	52	132	454
1942	97	556	756	116	401	364	160	217	307	65	72	1230	1230
1943	659	504	482	388	328	244	344	146	83	35	137	105	659
1944	162	531	572	385	147	88	1.48	114	652	328	187	135	652
1945	331	379	572	349	275	178	95	1.36	545	463	267	318	572
Max.	1620	1090	1210	1380	1830	456	698	4880	652	1540	782	1230	4880
Min.	61	61	140	116	48	44	48	18	47	25	28	34	417
Mean	631	432	474	412	294	200	238	453	282	267	192	368	1160

	William Discharge in William Gallons per day												
Year	Jan 。	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1920								Provide and a transport to the order of				65	
1921	85	129	85	85	120	85	47	45	28	31	54	57	28
1922	54	87	109	115	96	47	47	34	26	28	17	38	17
1923	56	71	73	96	98	77	39	39	38	31	38	67	31
1924	73	75	113	109	85	45	48	9.0	12	14	20	31	9.0
1925	67	68	57	19	45	23	17	7.8	8.4	12	23	22	7.8
1926	24	54	57	22	22	16	16	18	17		CHO-Stringue		CE CE CE CE
1934	C80 CHF 6MD	രുതെലെ	am am ⇔r	000 000 Cas	32	56	36	30	21	36	43	63	an (manam
1935	87	63	76	58	21	30	28	30	26	21	26	39	21
1936	46	109	105	110	31	36	26	35	25	67	53	52	25
1937	200	148	87	88	16	36	33	32	29	30	54	52	16
1938	58	69	84	58	10	45	34	35	24	21	16	35	10
1939	52	148	99	84	31	37	35	26	11	5.0	2.91	7.8	2.91
1940	23	26	59	56	23	21	28	32	43	3.81	37	30	3.81
1941	54	36	35	48	20	12	23	34	1.49	.775	18	22	.775
1942	31	47	62	48	43	47	19	36	23	30	27	40	19
1943	68	90	71	94	74	44	64	28	15	19	21	16	16
1944	36	31	89	113	46	20	17	19	14	32	30	47	14
1945	52	39	75	82	76	19	17	17	10	43	45	82	10
Max.	200	148	113	115	120	85	64	45	43	67	54	82	31
Min.	23	26	35	19	10	12	16	7.8	1.49	.775	2.91	7.8	.775
Mean	62.7	75.9	78.6	75.6	49.4	38.7	31.9	28.2	20.7	25.0	30.9	42.5	14.5

Swannanca River at Biltmore, N. C.

Mean Weekly Discharge in Million Gallons per day (continued)

Week		Intodia int	JOKES DE	Donar 60	in Mill	2011 00	LIONS PO	i day	CONTOLIN	acay	
Endin	g	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Jan.	7	318	582	91	90	26	133	64	162	85	184
o an e	14	281	237	72	83	30	75	38	83	48	
	21	508	443	61	76	36	66	53	225	81	93 83
	28	200	289	109	65	26	63	51	209	45	73
Feb.	4	221	255	102	325	28	54	57	222	36	52
T CD.	11	238	208	81	346	30	44	119	291	64	52
	18	253	175	98	404	66	48	173	168	213	53 157
	25	167	198	136	183	106	36	120	111	183	254
Mar.	4	138	148	118	271	114	39	70	86	193	149
Incaz 6	11	139	129	213	339	83	83	302	79	163	125
	18	181	117	185	171	108	76	233	123	109	83
	25	336	115	171	122	92	62	176	304	214	109
Apr.	1	672	106	143	117	95	98	124	180	353	257
Inp. 0	8	762	121	114	131	92	116	82	110	161	140
A CONTRACTOR OF THE CONTRACTOR	15	362	120	113	114	92	81	83	105	216	90
- Company	22	203	98	87	103	226	63	58	206	145	90 185
To the sale sale sale sale sale sale sale sal	29	163	183	67	150	129	59	55	170	162	193
May	6	121	134	59	117	74	46	69	107	120	145
1	13	119	76	47	76	43	41	56	152	99	117
	20	89	114	43	73	43	32	141	143	68	184
	27	70	56	108	89	40	33	222	128	81	120
June	3	57	58	136	103	32	21	103	94	71	79
	10	68	58	87	86	29	17	99	73	60	81
	17	56	49	55	51	68	32	224	88	46	100
	24	41_	53	81	51	61	14	78	53	36	88
July	1	38	37	72	44	35	16	52	132	25	46
	8	40	52	43	52	33	101	44	242	21	45
	15 22	32	40	41	68	38	220	43	189	39	39
	22	44	37	98	43	63	266	30	112	60	40
	29	37	37	204	44	40	127	87	124	27	36
Aug.	5	60	79	105	41	-39	64	49	79	62	37
ļ	12	115	47	176	42	114	54	47	61	52	34
	19	57	43	83	158	1320	37	87	63	57	68
	26 2	<u>43</u> 53	47	45	67	110	59 43	81	32 32	27	64 45
Sept.	2	23	160	42	62	911	43	50	32	21	45
	9	57	116	98	39	171	37	121	23	16	38
	16	53	83	39	27	94	23	61	17	17	50
	23	43	42	28	28	57	21	35	45	47	241
0-1	30	123	<u>32</u> 59	27	21	48	12	106 52	26	122	61
Oct.	7	109		25 25	34	44 28	11		21	95	140
	14 21	167	47	25 24	17		9.0 5.3	39 36	21 23	43 110	97 56
	28	505 121	220 181	23	12 22	43 32	17	36	24	85	108
Nov.	20	79	127	20	19	62	27	42	25	45	108 58
140 4 .	11	84	73	103	9.7		22	35	61	36	47
	18	89	81	41	21	56	19	30	30	32	67
	25	64	59	103	25	41	21	31	30 25	37	188
Dec.	2	54	68	54	24	39	23	40	24	101	103
	9	135	56	42	23	35	50	94	25	67	215
	9 16	120	51	48	23	43	37	73	21	63	157
	23	111	51 65	39	21	59	31	50	19	48	92
	31	170	116	76	29	233	81	393	61	86	213
Maxim	um	762	582	213	404	1320	266	393	304	353	257
Minim		32	32	20	9.7		5.3	30	17	16	34
								,		•	

Location (revised). Water-stage recorder and concrete control, lat. 35°39°11", long. 82°21°04", a quarter of a mile downstream from emergency pumping plant of Asheville Water Department, 1.9 miles downstream from Sugar Fork, 3 miles northwest of town of Black Mountain, Buncombe County, and 3.4 miles downstream from Right Fork. Datum of gage is 2,428.03 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 23.8 square miles.

Records available .- January 1926 to December 1945.

Average discharge. - 20 years, 31.0 million gallons per day.

Extremes.— Maximum discharge, 5,300 million gallons per day Aug. 13, 1940 (gage height, 8.55 feet), by slope-area method; minimum, 0.47 million gallons per day July 20, 21, 1926 (gage height, 0.88 foot).

Remarks. - City of Asheville diverts part of its water supply 3 miles above station.*

			Mean	Discha	arge in	MILLI	on Gal	lons p	er day				
													Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean
1926	65.9	28.0	27.9	29.2	14.1	3.90	9.69	16.1	15.8	8.40	50.5	56.4	25.6
1927	29.3	45.2	51.3	32.6	12.3	30.3	8.27	5.05	3.06			58.2	25.0
1928	26.9	26.1	28.6	62.1	49.4	23.5	17.6	129	73.0	49.7	23.4	16.3	43.9
1929	37.0	65.2	123	44.2	59.0	39.9	32.6	10.4	47.2	89.8	71.7	36.1	54.7
1930	29.0	19.3	35.5	30.7	36.8	7.82	2.71					17.8	17.7
1931	21.8	16.8	20.9	66.5	35.1	7.88	9.88	22.0	8.01		2.56	36.8	20.9
1932	54.0	52.1	41.7	31.4	39.5	11.3	7.95			56.8	40.3	84.6	35.8
1933	50.9	65.2	36.1	34.7	50.0	8.46		4.83		3.39	4.14	6.10	
1934	16.3	19.5	84.0	33.3	16.0	57.4	38.2	16.8	12.1	23.3	43.0	34.8	32.9
1935	61.8	33.7	66.5	62.1	27.9	11.4	13.2	29.1	33.2		32.6	15.3	32.6
1936	107	65.2	87.2	91.7	17.8	5.50			16.9	78.2	21.5	42.9	46.4
1937	109	52.4	32.2	35.5	23.1	8.33	10.8	25.8	27.8	49.6	26.0	27.5	35.7
1938	30.2	42.4	56.8	29.6	29.1	26.2	31.0	34.6	4.81			12.1	27.0
1939	35.5	94.3	58.1	40.8	19.3	10.3	16.3	31.3	5.93				,
1940	4.13		42.4	56.1	12.3	14.0		223	32.5	6.04		38.4	40.0
1941	24.7	9.43		28.0	8.85			15.8	4.21				17.3
1942	18.3	45.5	64.3		34.0	49.0	19.1	20.9	24.7	9.69			30.7
1943	54.9	56.4	46.0	46.7	41.5	17.4	33.3	8.27					26.9
1944	16.8	48.0	63.0	48.6	22.0	6.52	4.59			20.7	14.4	22.0	23.6
1945	33.3	47.2	41.4	41.3	38.8	24.0	6.78	19.1	37.3	35.7	30.7	41.7	32.9
Max.	109		123	91.7	59.0	57.4		223	73.0	89.8	71.7	84.6	54.7
Min.	4.13			21.4					3.06		2.56	2.98	17.3
Mean	41.3	42.5	51.5	43.3	29.3	18.3	17.6	32.2	19.2	22.8	23.2	31.6	31.0

^{*}Figures for diversion by City of Asheville beginning this data are available in office of Water Resources and Engineering, Department of Conservation and Development, Raleigh, N. C. See Page 77.

North Fork Swannanoa River near Black Mountain, N. C.

Maximum D)ischarge	in	Million	Gallons	per	dav	
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Year	Jan.	Feb .	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Max.
1926	587	53	87	71	47	7.8	140	52	61	15	498	231	587
1927	64	143	110	69	52	70	18	9.2	6.1	59	285	224	285
1928	59	86	134	147	116	57	32	1250	302	208	37	30	1250
1929	86	335	484				63	33	410	450	183	80	
1930	41	32	127	73	85	14	3.75	6.8	23	6.8	127	67	127
1931	77	28	72	322	90	19	34	61	3 0	2.62	4.91	167	322
1932	119	7 9	165	82	297	23	26	17	41	521	112	678	678
1933	112	129	89	142	324	15	11	9.7	43	8.0	11	15	324
1934	81	221	525	53	67	282	243	44	46	123	358	143	525
1935	325	85	315	207	42	24	34	159	208	16	247	30	325
1936		335	258	456	35	12	17	78	207	711	41	242	711
1937	389	103	39	7 9	41	14	26	182	94	425	45	98	425
1938	67	79	121	54	149	52	165	132	11	2.97	112	38	165
1939	300	285	232	90	38	29	69	404	16	5.4	3.62	4.78	404
1940	15	49	129	324	28	67	43	2470	144	16	47	360	2470
1941	56	14	40	65	17	7.8	259	35	10	4.78	17	.75	259
1942	53	229	212	39		253	140	38	198	21	17	583	583
1943	230	203	144	225	169	51	74	18	26	3.42	68	63	230
1944	47	200	185	100	43	12	19	24	142	74	116	62	200
1945		189	157	_93_	29	75	11	67	262	313	105	82	313
Max.	587	335	525	456		282	259	2470	410	711	498	678	2470
Min.	15	14	39	39	17	7.8	3.75	6.8	6.1	2.62	3.62	4.78	127
Mean	170	144	181	1/12	97.6	57.1	71.4	254	114	149	122	164	536

Minimum Dis	ahamaa da	1/2 7 7 2 cm	0077000	~~~ da
ברנו שוושרמות	charge in	מסווחש	Gallons	per dav

			1	111111111111111111111111111111111111111	III DIOCI	141 50		2017 44		Jer day			Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Min.
1926	8.4	17	18	14	7.8	1.49	0.472	6.0	4.97	4.91	4.65	15	0.472
1927	19	22	25	21	1.23	8.5	4.07	2.84	1.71	1.41		15	1.23
1928	15	14	10	30	29	9.7	9.2	8.9	21	10	17	11	8.9
1929	23	23	57	32	<u></u>	21	16	4.13	3.49		35	28	
1930	17	14	14	18	14	3.75	2.13	1.62	1.55		3.75		1.55
1931	9.3	9.6	11	27	15	3.75	3.62	8.0	2.23	1.63	1.94		1.63
1932	21	32	21	14	17	6.2	2.58	2.00	1.36	5.2	22	14	1.36
1933	25	37	23	15	17	4.33	3.62	2.68	3.22	2.49	2.87		2.49
1934	6.2	5.1	19	21	8.2	22	19	8.2	5.0	7.8	9.7	19	5.0
1935	27	17	26	32	19	4.84	4.20	2.97	5.2	2.97	3.88		2.97
1936	9.0	26	37	27	7.1	3.10	2.52	3.88	4.52	22	12	11	2.52
1937	56	36	26	22	11	5.1	3.81	8.4	6.5	6.5	15	13	3.81
1938	17	23	31	16	10	15	6.5	6.5	2.58	2.39	2.78		2.39
1939	13	38	24	22	12	3.36	4.26	5.9	2.78	2.07	2.39		2.07
1940	2.20		18	18	6.5	4.52	4.84	8.4	7.8	4.13	7.4	6.0	2.20
1941	15	6.8	5.8	14	2.87	1.39	3.55	7.1	1.13	.904	1.94		.904
1942	7.1	17	18	12	8.4	14	3.88	9.0	4.01	6.5	5.8	12	3.88
1943	18	24	18	23	22	7.8	13	2.65	1.61	2.07	2.58		1.61
1944	8.4	6.5	26	28	12	2.45	1.87	1.87	1.23	7.8	5.6	13	1.23
1.945	15	12	18	19	21	12	3.42	3.94	7.1	11	12	20	3.42
Max.	56	38	57	32	29	22	19	9.0	21	22	35	28	8.9
Min.	2.20	2.84	5.8	12	1.23	1.39	.472	1.62	1.13		1.94	1.74	.472
Mean	16.6		22.3	21.2	12.7	7.71		5.25	4.45	5.95	8.60	10.6	2.48

Week				1113 13	scharge		22011 04		1		
Endin	g	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Jan.	7		45	33	42	34	32	70	69	26	52
	14 21	127	25 22	30 27	37 32	31 30	28 17	74 38	52 35	25 9.7	124
	28	26	25	22	40	25 25	14	25	1 48	8.4	37 48
Feb.	4	24	28	17	27	20	13	68	55	7.8	25
	11	23	29	37	777	25	14	59	75	7.1	19
	18 25	21 37	40 75	27 23	39 44	11 16	21 19	49 50	6 9 65	6.3	54 33
Mar.	4	28	43	17	181	16	17	32	35	182	31
	11	27	72	21	121	51	15	32	28	83	52
	18	20	74	26	187	36	14	25	30	28	123
Ann	25 1	30 37	37 27	24 56	109 78	39 26	14 44	59 64	61 27	32 100	123 52 59 78 46
Apr.	8	35	22	57	48	40	110	45	23	32	78
	15	40	41	74	37	34	48	32	17	30	46
	22	25	33	45	36	30	54	21	57	43	72 57
74	29	17	36	72	51 58	22	59	21	42	28	57
May	6 13	12 10	25 11	59 74	71	710 571	33 59	86 3 0	87 67	18 12	35 25
	20	24	5.2	36	52	57	30	24	36	10	23
	27	12	2.25	35	52	34	28	28	25	11	34
June	3	7.8	31	39	65	15	17	17	16	41	21
	10 17	5.9	17 41	34 20	46	9.7	9.7 7.1	10 12	9.7	70 41	17
	24	4.13 2.29	41	14	30 25	7.8 6.5	5°5	11	8.4 5.4	95	11 8.4
July	1	1.59	15	25	48	4.59	4.26	11	7.8	25	5.4
	8	1.38	7.8	19	46	2.76	5.5	15	5.2	26	9.7
	15	.547		21	39	2.49	4.91	9.0	4.84	61	5.4
	22 29	.504 15	10 5.9	12 17	27 20	2.74 2.64	16 13	5.6 3.29	5.7 5.8	45 27	17 23
Aug.	<u>-</u> 5	43	4.39	11	23	2.48	10	7.1	6.3	18	6.3
	12	11	6.1	39	12	2.43	18	4.33	4.13	31	5.2
	19	9.7	5.2	436	10	2.63	13	4.01	4.33	16	17
Sept.	26	23 13	3.36 5.9	54 80	-6.1 4.33	3.94 2.00	38 25	2.78	4.59 6.1	9.7 8.4	87 19
Sop o.	9	14	4.01	146	11	1.64	17	2.91	21	6.4	86
	16	26	3.04	50	12	3.75	7.1	1.89	23	13	34
	23	13	2.80	47	24	7.1	3.68	2.97	7.1	15	12
Oct.	30 7	13 12	1.65	26 19	154 135	8.4 2.86	2.62	28	3.88 3.22	15 37	6.5
0000	14	8.4	15 5.0	12	32	2.73	1.78 1.78 1.80	13	2.57	37	4.39
	21	7.8	5.0	98	32 79	2.29	1.80	157	2.57 4.78	16	3.49
	28	7.1	1 2067	75	124	2.73 2.29 2.59	1.87	34	3.18	9.7	3.42
Nov.	4	6.5 14	2.78 3.23	32 25	101 67	4.97	2.19	59	3.04	17	6.5
	18	137	56	19	81	61	1.98	40 27	5.7 3.49	20 13	5.9 98
	18 25	137 35 36	19	28	56	19	3.75	47	4.07	83	19
Dec.	2	36	19	17	41	16	2.80	27	3.75	87	19
	9 1 6	20 36	106 54	14	34	32	26	17	4.46	45	14
	23	30	45	15 21	29 48	14 7.8	41 56	49	8.4	21 22	21 15
	31	138	34	15	32	14	34	225	7.1	28	11
Maxim			106	436	187	61	110	225	87	182	124
Minim	um		1.65	11	4.33	1.64	1.78	1.89	2.57	6.3	3.42

Mean Weekly Discharge in Million Gallons per day (continued)

F17 .		Me	ean Wee	kly Disc	charge :	in Milli	on Gal	lons pe	r day (d	continue	ed)
Week E ndin	ď	1936	1937	1938	1939	1940	1941	1942	701.2	101.1.	٦٥١.٢
									1943	1944	1945
Jan.	7	118	178	35	29	2.38	45	25	48	25	65
	14	110	69	23	25	4.78	21	11	23	12	29 23 23
	21	169	124	18	21	7.1	18	20	71	23	23
	28	62	80	43	19	3.01	17	17	67	11	23
Feb.	4	74	67	38	138	2.93	14	19	65	8.4	14
	11	68 67	54	30	108	10	10	44	105	22	12 58
	18	67	43	41	111	23	9.7	78	48	70	58
	25	49 45	58	59	52	25	7.1	40	32	57	89
Mar.	4	45	37	47	74	23 25 48	9.0	20	23	63	47
	11	50	33	71	104	32	26	81	21	50	37
	18	50 64	30	63	50	32 45	22	95	41	32	21
	25	98	34	53	33	35	19	61	85	70	30
Apr.	1	160	30	41	35	40	29	41	51	112	76
	8	205	34	34	45	39	43	26	29	45	40
	15	92	32	40	36	37	26	28	28	56	23
	22	46	28	26	31	107	18	16	79	43	47
	29	34	49	19	50	47	26	14	52	49	56
May	6	25	36	14	32	23	15	13	29	33	39
Inca y	13	25	26	11	20	13	14	9.7	55	27	30
	20	25 18			15	υ 7	7.8		<u> </u>	27	32
		TO	25	15	172	9.7		50	43	17	57
-	27	11	15	61	14	9.0	4.26	64	44	17	36
June	3	7.1	12	50	21	6.3	3.42	34	28	13	21
	10	5.9	10	30	15	6.2	2.79	39	18	9.0	19
	17	7.1	8.4	18	7.8	23	4.59	113	17	7.1	36
	24	4.46	7.8	24	5.9	21	1.69	28	9.7	4.33	26
July	l	3.75	5.3	21	5.0	7.8	2.17	15	25	2.59	15
	8	4.39	10	11	18	9.0	39	11	50	2.35	8.4
	15	3.75	7.8	9.7	27	14	80	13	37	8.4	5.4
	22	4.52	7.8	36	9.0	26	105	6.3	30	5.6	6.5
	29	3.29	14	71	13	16	52	45	19	2.84	5.7
Aug.	5	8.4	17	40	11	14	18	19	17	12	8.4
	12	44	18	74	9.0	96	14	19	10	9.7	7.8
	19	1 5	12	30	79	539	10	22	10	3.81	29
	26	9.0	17	12	29	44	23	30	4.20	2.56	31
Sept.		12	79	7.1	19	335	14	14	2.80	2.14	13
20200	9	17	47	7.8	9.7	56	6.5	30	2.09	1.54	19
	16	6.5	31	4.78	4.46		4.46	15	1.72	1.49	23
	23	7.8	19	3.36	3.88	13	2 61.	6.5	0.7	11.49	94
	23 30	39	7.1	2 02	2.98	ر <u>ـ</u> 0 7	2.64 1.43	48	9.7 3.29	30	21
Oat	7	44	20	2.93 2.76	3 01.	9.7		15	2 20	30	70
Oct.				2.70	3.94	6.5	1.09		2.29		
	14	61	14	2.39	2.43	5.6	1.01	9.0	2.18	10	34
	21	191	98	2.52	2.35	7.8	1.10	7.8	2.93	25	15
27	28	39	63	2.75	2.30	4.46	2.20	8.4	2.91	21	31
Nov.	4	24	47	2.86	2.65	18	7.1 2.84	9.7	3.06	11	16
	11	28	23	45	2.54	9.0	2.84	8.4	20	7.8	12
	18	26	28	10	2.45	21	2.07	7.1	4.91	6.3	19
	25	16	17	39	3.04	9.0	3.75	7.1	3.02	6.1	68
Dec.	2	12	28	15	2.69	11	4.01	11	2.56	43	32
	9	47	17	8.4	2.58	7.8	24	30	2.37	19	56
	16	37	16	12	2.33	12	14	21	2.04	17	39
	23	28	27	8.4	2.97	23	12	14	1.83	14	24
	31	66	48	20	3.94	104	36	147	21	36	50
Maxim		205	178	74	138	539	105	147	105	112	94
Minim		3.29	5.3	2.39	2.30		1.01	6.3	1.72	1.49	5.4
***************************************	- CALL	700/	707	- 0)/	ر و ح	200	+ 00+		+015	- 04/	7 94

Beetree Creek near Swannanoa, N. C.

Location (revised).— Water-stage recorder and modified 4-foot Parshall flume set in masonry control, lat. 35°39°11", long. 82°24°20", 200 feet upstream from upper intake to Asheville water supply 1,000 feet upstream from Beetree Reservoir, and 3.8 miles north of Swannanoa, Buncombe County. Datum of gage is 2,728.39 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area - 5.46 square miles.

Records available .- February 1926 to December 1945.

Average discharge. - 19 years, 6.7 million gallons per day.

Extremes. - Maximum discharge, 885 million gallons per day Aug. 13, 1940 (gage height, 6.20 feet), by computation of flow over weir; minimum, 0.43 million gallons per day July 22, 1926, Aug. 6, 1930; minimum gage height, 0.31 foot Sept. 18, 1944.

Remarks. - Records good except those above 26 million gallons per day which are fair.

									-				Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean
1926		6.45	6.65		4.63	1.72	1.41	2.66		2.55	10.5	12.7	
1927	7.04		12.4	6.85	3.89		2.37	1.35		1.07	4.38	14.4	6.10
1928	7.11	6.25	7.88		12.2	5.34	3.48		13.8	7.24	5.11	3.28	9.01
1929	6.88	11.7	23.9	9.82		9.11	8.33	2.58	10.9	21.8	14.8	7.36	11.6
1930	. 5.99	5.12			5.68		0.866		1.47	1.09	6.20	5.08	4.15
1931	6.30	3.61	4.69	16.0	7.95	2 .63	1.61	6.31	3.49	1.71	1.06	6.35	5.14
1932	10.1	11.4	9.04	8.72	9.37	2.68	2.38	1.41	0.950	5.44	7.82	16.4	7.17
1933	11.0	13.6	8.07		11.7	2.45	1.67	1.27	1.98	0.866	0.950	1.08	5.37
1934	2.20	3.49	14.5	8.20	3.21	6.72	3.50	1.96	1.62	3.42	5.55	5.63	5.01
1935	10.5	5.90	1.37	12.5	5.10	2.34	2.81	4.06	4.82	1.32	6.59	2.98	6.05
1936	21.0	14.8	20.5	22.1	4.33	1.51	1.14	2.45	4.41	14.0	4.73	8.72	9.95
1937	24.9	11.5	6.85	7.56	5.54	3.20	2.13	4.65	5.52	8.98	5.14	4.59	7.56
1938	6.12	9.17	13.8	6.85	5.34	5.19	6.46	8.53	2.06	0.982	3.37	3.50	5.94
1939	7.10	19.4	12.4	8.72	5.98	4.91	4.70	5.48	2.11	1.00	0.950	1.02	6.06
1940	1.29	4.30	8.85	9.88	3.79	3.13		40.0	9.11	2.33	2.88	8.53	8.14
1941	7.04			7.04	3.15	1.48	10.1	4.70	1.67	0.840	1.14	3 .41	4.16
1942	3.66	8.85	15.9	5.33	8.46	7.17	2.79	4.21	5.38	2.96	2.52	11.1	6.52
1943	13.8	10.5	11.4	10.7	9.24	5.15	8.91	2.67	1.22	0.904	1.50	1.63	6.45
1944	4.56	10.7	12.7	11.4	5.70	2.44	1.54	1.45	3.41	5.68	3.22	5.93	5.70
1945	8.72	10.3	10.6	11.5	10.6	5.96	2.61	2.64	4.92	6.85	7.49	9.37	7.62
Max.	24.9	19.4	23.9	22.1	12.3	9.11		40.0	13.8	21.8	14.8	16.4	11.6
Min.	1.29	2.88	1.37	5.33	3.15	1.48	0.866	1.11	0.885	0.840	0.950	1.02	4.15
Mean	8.70	9.06	10.2	10.2	6.89	4.13	3.61	6.04	4.10	4.55	4.80	6.65	6.72

Beetree Creek near Swannanoa, N. C.

Maximum Discharge in Million Gallons per day

													Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Max.
1926	COME COMO COMES	11	13	13	13	2.97	12	8.8	5.2	5.4	70	52	
1927	15	33	37	10	7.8	16	6.7	3.17	2.03	5.7	46	48	48
1928	13	11	30	26	26	7.8	11	176	51	23	6.5	4.39	176
1929	12	47	62	16	21	18	23	5.3		110	34	10	110
1930	8.4	7.4	14	15	13	3.88	1.39	4.20			22	12	22
1931	19	4.46	11	54	15	8.4	3.88	20	11	2 .33	1.71	17	54
1932	19	16	22	17	54	4.20	5.94	3 . 49	3.04	23	18	103	103
1933	25	24	16	41	30	5.2	2.87	2.97	4.01	2.26	1.84	1.74	41
1934	5.2	31	68	13	5.2	19	6.4	3.17	3.62		33	21	68
1935	52	12	47	27	7.8	4.33	7.8	19	31	2.97	48	4.59	52
1936	102	64	79	103	6.5	2.94	4.91	7.8	39	90	7.1	33	103
1937	89	18	8.4	14	9.0	6.5	7.1	23	17	56	10	13	89
1938	12	17	30	9.7	16	8.4	36	27	5.9	1.25	12	8.4	36
1939	49	37	49	20	10	14	25	49	5.7	2.20	1.45	2.52	49
1940	5.6		18	27	7.1	12	5.7	341	39	5.9	5.7	65	341
1941	17	5.2	9.7	12	5.4	5.4	27	14	3.36	3.68	3 .49	8.4	27
1942	7.1	31	48	7.8	29	23	8.4	7.8	23	5.6	5.2	85	85
1943	43	34	35	36	28	18	17	4.85		1.68	8.4	7.1	43
1944	11	32	32	24	10	4.91	3.94	3.62	47	21	9.7	11	47
1945	30	26	32	25	23	12	5.2	4.78		41	23	18	41
Max.	102	64	79	103	54	23	36	341		110	70	103	341
Min.	5.2	4.46		7.8		2.94					1.45		22
Mean	33.3	23.6	33.1	25.5	16.8	9.85	11.1	36.4	19.4	21.1	18.4	26.3	80.8

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1926		4.26	5.04	4.20	3.10	1.03	0.47	1.01	1.14	1.61	1.42	4.78	
1927	5.0	5.7	6.1	5.2	2.13	3.36	1.23	0.84	0.55	0.49	0.81	3.75	0.49
1928	3.94	4.59	3.68	9.4	6.5	2.62	2.03	2.23	3 . 94	2.23	4.13	2.81	2.03
1929	3.68	4.85	13	6.7	8.6	5.0	4.20	1.39	1.23	5.0	7.9	5.9	1.23
1930	4.46	3.88	3.75	4.46	3 . 36	1.23	0.65	0.45	0.49	0.75	1.29	2.55	0.45
1931	3.42	3.10	2.97	6.9	3.94	1.11	0.99	1.68	1.62	1.20	0.89	1.01	0.89
1932	5.0	7.4	5.6	5.4	3.68	1.74	1.36	0.70	0.59	0.87	4.59	3.49	0.59
1933	5.2	8.7	5.4	5.9	3.88	1.55	1.29	0.75	0.81	0.68	0.75	0.89	0.68
1934	1.36	1.23	4.07	5.4	1.97	3.04	1.94	1.55	0.98	1.68	2.13	3.68	0.98
1935	5.0	3.42	5.0	6.5	3 . 75	1.29	1.20	1.11	1.49	0.98	1.11	1.97	0.98
1936	2.33	6.8	6.5	5.8	2.16	0.81	0.51	0.68	1.74	5.1	3.2	3.17	0.51
1937	114	8.4	6.0	5.2	2.91	2.00	1.12	1.81	1.87	1.81	3.42	2.58	1.12
1938	3.88	5.5	7.8	4.01	2.62	3.36	1.81	2.65	1.14	0.89	0.91	2,20	0.89
1939	3.49	9.0	4.91	5.0	3.42	1.97	1.81	1.84	1.14	0.78	0.84	0.79	0.78
1940	0.70	0.84	5.5	4.91	2 .45	1.81	1.81	1.78	2.58	1.78	2.07	1.94	0.70
1941	3.88	2.07	2.07	4.26	1.45	0.82	1.45	2.07	0.82	0.52	0.78	0.90	0.52
1942	1.74	4.26	5.2	3.29	3.23	2.97	1.16	1.81	1.55	2.07	1.87	3.29	1.16
1943	5.4	4.65	4.01	5.9	5.4	1.87	3.88	1.16	0.71	0.71	0.90	0.78	0.71
1944	2.45	2 .39	6.5	7.1	3.29	1.16	0.84	0.78	0.52	2.26	2.00	4.26	0.52
1945	4.01	3.75	5.3	5.6	5.7	3.10	1.74	1.62	1.49	2.45	2.97	4.65	1.49
Max.	14	9.0	13	9.4	8.6	5.0	4.20	2.65	3.94	5.1	7.9	5.9	2.03
Min.	0.70	0.84	2.07	3.29	1.45	0.81	0.47	0.45	0.49	0.49	0.75	0.78	0.45
Mean	4.15	4.74	5.42	5.56	3.63	2.09	1.57	1.40	1.32	1.69	2.20	2.77	0.880

Week			140011	TOOKIJ D	10011016	,	1		per day	<u>'</u>	
Endin	ıg	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Jan.	7		11	9.0	6.5	7.1	9.0	11	19	2.34	8.4
7	14		6.3	8.4	7.1	5.9	7.8	14	11	2.98	21
i ii	21		5.6	6.5	6.5	6.0	5.1	8.4	7.8	2.00	7.1
1	28		5.7	5.3	7.8	5.3	4.20	5.9	9.0	1.83	7.8
Feb.	Ţτ		6.5	4.91	5.6	5.3	3.68	13	12	1.76	4.91
	11 18	1 70	6.1	7.8	10	6.2	3.49	13	15	1.65	3.81
ı	25	4.78 8.4	9.7 19	7.1 5.7	9.0 8.4	4.97 4.26	3.81 3.68	12 11	14 14	1.63 2.17	8.40 6.1
Mar.	4	7.1	12	4.78	29	4.00	3.29	7.8	9.0	26	5.8
	11	6.5	19	5.6	25	9.7	3.36		6.3	15	11
ŧ	18	5.6	15	7.1	32	8.4	3.81	6.4	6.0	5.4	25
* P	25	7.1	9.0	7.8	22	8.4	4.46	12	12	7.1	12
Apr.	1	7.8	6.5	15	17	6.1	8.4	13	7.8	21	12
	8	8.4	5.7	12	11	9.0	24	11	7.1	7.1	16
	15	10	8.4	19	8.4	8.4	12	9.0	6.5	7.8	12
	22 29	7.1 5.6	7.1 6.5	12 17	7.1 11	7.1	14 16	6.1 7.8	18	10	12 12
May	6	3.81	5.2	16	12	5.2 4.13	8.4	20	9.7 12	7.1 4.65	6.3
I.a.y	13	3.55	3.94	18	16	4.33	12	8.4	20	3.22	4.46
	20	7.1	3.14	9.7	11	9.0	7.1	5.9	12	2.90	4.59
	27	4.46	2.47	7.8	11	6.3	5.0	5.8	6.4	2.21	5.9
June	3	3.21	6.0	7.8	14	3.42	6.5	3.75	4.07	3.55	3.94
1	10	2.16	5.1	7.1	10	2.76	2.88	2.56	2.78	6.1	3.20
	17	1.62	9.0	5.7	7.8	2.31	2.40	2.74	2.36	6.1	2.19
7-7-	24	1.33	11	3.62	6.1	2.00	1.87	2.59	1.71	12	1.87
July	1 8	1.25 1.04	4.39	4.33 3.04	9.7 6.5	1.43	1.29	2.49	2.70	4.26	1.38
	15	0.82	2.25	3.36	13	0.94	1.36 1.46	3.55 2.67	1.62 1.43	4.78 4.72	1.58
1	22	0.54	2.91	2.24	9.0	0.85	2.20	1.78	1.65	2.71	3.18
71 age	29	1.54	1.58	5.3	5.2	0.72	1.57	1.85	1.87	2.24	5.2
Aug.	5	4.13	1.42	2.85	4.26	0.54	2.55	2.14	2.02	1.93	2.02
2	12	1.65	1.74	5.7	3.06	1.60	4.59	1.75	1.12	2.43	1.72
is a	19	1.16	1.29	68	2.60	0.98	2.29	1.32	1.11	2.11	1.66
Cont	26	4.72	0.94	12	2.01	1.57	12	0.91	0.90	1.74	11 .
Sept.	9	2.81 2.34	1.39	14 28	1.44 5.3	0.59	7.8 6.5	0.72	1.47 2.14	1.54	3.10
reserve	16	2.11	0.88	10	4.91	1.29	3.19	0.83	3.27	1.40 1.96	12 4.33
4	23	2.14	0.73	9.0	8.4	2.01	2.06	0.87	1.83	1.38	2.11
11.10	30	2.91	0.59	4.72	28	2.25	1.76	1.50	0.92	1.75	1.58
Oct.	7	3.49	0.54	3.68	43	0.89	2.11	2.35	0.87	4.39	1.38
	14	2.80	1.94	2.53	9.0	1.03	1.97	1.24	0.72	5.2	1.25
	21	2.36	1.02	10	12	0.81	1.47	12	1.07	2.66	1.16
Nov.	28	1.89	0.88	13 6.5	26 19	0.89	1.40	5.3	0.84	2.09	1.26
1000	11	2.80	1.05	5.6	15	2.02 2.53	1.32	10 7.8	0.81 1.07	2.89 3.23	1.47
- 2-2- E.A 2-2-	18	25	9.7	4.46	16	13	0.88	5.6	0.79	2.45	18
And and and and and and and and and and a	25	9.7	5.4	5.4	12	7.1	1.23	9.0	1.08	9.0	4.91
Dec.	2	8.4	4.91	4.07	9.7	45	1.01	6.1	0.90	12	4.12
4	9	5.5	27	3.29	7.8	7.8	3.81	3.94	1.14	6.2	3.29
99	16	8.4	12	3.11	6.3	4.91	7.1	9.0	0.99	4.65	3.49
	23	7.8	12	3.36	7.8	3.23	9.0	12	1.16	4.13	2.84
Maxim	31	28	7.8	3.16 68	7.1	4.26	7.1	41	1.08	4.65	2,23
Minim			0.54	2.24	1.44	13 0.54	0.88	41 0.68	20 0.72	26 1.38	25 1.16
MALI LIII		Ē	0004	2024	T 044	1 0004	1 0.00	0.00	0.12	ارود	I TOTO

Mean Weekly Discharge in Million Gallons per day (continued)

		Mean W	eekly D	ischarg	e in Mi	llion G	allons]	per day	(conti	nued)	
Week Ending		1936	1937	1938	1939	1940	1941	1942	1943	1 944	1945
	7 14 21 28	21 21 34 14	40 16 28 19	6.5 4.84 4.13 7.8	5.7 5.5 4.84 4.39	0.78 1.91 1.72 0.91	13 7.1 5.2 4.52	4.26 2.32 3.55 4.01	16 7.8 16 15	5.7 3.36 6.5 3.29	16 8.4 7.1 6.1
	11 18 25	16 16 16 11	16 12 10 11	9.0 6.5 7.8 13	2.44 21 25 12	0.88 2.41 5.4 6.3	3.68 2.74 3.36 2.49	4.65 9.0 13 8.4	14 19 9.0 5.9	2.60 5.30 14 14	4.13 4.13 12 18
Mar.	11 18 25	9.7 9.7 9.0 23	7.8 7.1 6.3 7.1	11 17 14 12	15 25 10 6.2	9.7 7.8 9.7 7.8	2.80 6.5 6.4 5.4	5.5 21 22 16	4.59 5.0 9.0 23	14 10 7.8 13	9.7 6.5 7.8
Apr.	1 8 15 22 29	47 54 21 9.7 7.1	6.5 6.5 7.1 6.1	10 8.4 8.4 6.1 4.59	6.1 8.4 7.8 6.5 12	7.8 7.8 7.8 14 10	8.4 9.7 7.1 5.2 6.4	9.7 6.5 5.9 4.39 4.07	12 7.1 6.5 16 13	21 10 14 10 9.7	18 10 6.5 14 16
May	6 13 20 27	5.4 5.3 4.84 3.22	8.4 6.2 5.5 4.07	3.62 2.89 3.49 0.90	8.4 5.6 4.39 5.1	5.9 4.01 3.42 3.01	4.78 4.33 2.87 1.90	4.84 3.75 9.7 16	7.1 11 10 9.0	8.4 7.8 4.84 3.55	9.7 15 9.7
June	3 10 17 24	2.16 1.80 1.75 1.30	3.29 2.77 3.22 4.26	9.0 6.3 4.07	9.7 7.8 3.68 2.75	2.45 2.36 3.81 4.01	1.69 1.44 2.29 0.98	7.1 65 13 5.6	6.5 4.65 5.4 2.80	4.13 3.62 2.25 1.87	5.7 5.9 7.8 6.5
July	1 8 15 22 29	0.92 1.30 0.88 0.96 0.67	2.32 2.45 1.56 1.63 2.04	4.07 2.73 2.40 5.7 16	2.40 4.39 9.0 3.02 2.85	2.56 3.00 4.07 4.26 2.51	1.14 6.5 11 17 8.4	3.42 2.59 2.76 1.58 4.13	8.4 14 9.7 7.1 5.0	1.22 1.25 2.27 1.60 1.23	3.75 2.58 2.35 3.08 2.39
Aug.	5 12 19 26	1.92 3.62 2.24 1.85	4.97 0.72 2.89 2.71	-8.4 18 7.8 3.68	3.36 2.55 11 5.6	2.35 12 87 9.7	4.33 3.36 3.17 7.8	2.56 4.13 5.23 5.5	4.84 3.22 3.06 1.68	1.93 1.29 1.85 1.05	2.43 2.25 3.36 2.93
Sept.	2 9 16 23 30	3.04 4.29 2.73 2.91 8.4	10 7.8 7.1 3.21 2.16	2.87 3.36 1.96 1.45 1.30	4.97 3.29 1.71 1.43 1.24	77 14 7.1 4.72 4.07	4.65 2.32 1.58 1.36 1.01	3.29 7.8 4.39 2.25 7.8	1.25 1.09 0.80 2.07 0.92	0.88 0.60 0.68 2.88	2.03 2.31 2.41 12 3.49
Oct.	7 14 21 28	8.4 13 31 7.8	2.75 2.45 15 14	1.11 0.98 0.92 0.95	1.27 0.98 0.91 0.87	2.46 2.13 2.69 1.90	0.79 0.65 0.68 1.20	4.26 2.88 2.41 2.54	0.78 .76 1.03 0.98	7.1 3.16 7.1 6.5	7.1 3.81 7.1
Nov.	11 18 25	5.2 5.2 5.7 4.13	11 5.6 4.84 3.62	0.94 3.81 1.58 6.1	0.92 0.92 0.89 1.09	3.55 2.31 3.49 2.48	1.45 0.99 0.80 1.31	3.06 2.69 2.33 2.20	1.08 2.80 1.27 1.04	3.36 2.56 2.13 2.26	4.07 3.23 4.97 16
Dec.	2 9 16 23 31	3.36 9.0 9.0 7.1	4.01 3.29 3.17 4.13 7.8	3.23 2.45 3.29 2.62 5.6	0.90 0.83 0.82 1.18 1.24	2.36 2.12 3.68 5.1 23	0.97 3.23 2.46 2.35 5.9	2.76 7.1 6.5 4.33 26	0.97 1.14 0.98 0.90 3.42	6.5 5.6 5.4 4.59 7.8	7.8 12 9.0 5.6 12
Maximu Minimu	ım	54	40 0.72	18 0.90	25 0.82	87 0.78	17 0.65	26 1.58	23 0.76	21 0.60	18 2.03

Beetree Reservoir near Swannanoa, N. C.

Location. Staff gage on intake tower, lat. 35°38'25", long. 82°24'03", at Beetree Dam on Beetree Creek, 3.0 miles north of Swannanoa, Buncombe County, N. C. Datum of gage in mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 7.6 square miles.

Records available. - June 1927 to December 1945.

Remarks. Reservoir is formed by earth-fill dam with uncontrolled spillway at right end. Dam completed December 1926, and storage began January 11, 1927; water in reservoir first reached maximum pool elevation March 8, 1927. Total capacity at elevation 2,668.0 feet (crest of spillway) is 545,000,000 gallons, of which 532,000,000 gallons is controlled storage above 2,593 feet (minimum pool). Reservoir is used for municipal water supply for city of Asheville by means of 24-inch pipe line with capacity of 8,000,000 gallons per day. Data furnished by city of Asheville.

Diversion by City of Asheville in Million-Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1927		No Re	ecord	ri instinaaninstanininkoimi		7.8	6.8	7.4	7.1	6.0	5.9	7.5
1928	8.1	8.0	1		No R	ecord					6.8	7.0
1929	6.2	6.0	6.0	6.8	7.1	7.0	7.7	7.6	7.6	7.5	7.5	7.4
1930	7.4	7.5	6.5	6.5	6.5	6.4	7.2	6.2	6.5	5.5	5.1	4.81
1931	4.68		4.71	4.83	5.1	6.5	6.5	6.5	6.5	5.9	5.2	5.0
1932	5.3	4.97	4.94	4.97	5.0	5.7	6.2	7.0	6.6	5.4	5.2	5.2
1933	5.2	5.2	5.3	5.3	5.4	6.4	5.9	6,3	5.7	6.7	5.2	4.84
1934	6.1	4.86	4.87	5.2	5.5	6.3	6.1	6.0	5.5	5.1	4.99	5.6
1935	5.8	5.9	5.9	6.6	6.4	6.4	6.8	6.8	6.7	6.2	5.7	5.6
1936	5.6	5.5	5.6	7.4	8.0	7.6	6.8	7.4	7.7	8.5	8.8	8.4
1937	7.5	7.8	7.7	7.7	7.6	7.8	7.9	8.2	8.4	7.8	6.5	6.5
1938	6.5	7.1	7.1	7.8	7.1	7.1	9.0	7.8	7.0	3.36	8.4	10
1939	6.5	6.5	6.5	6.5	7.1	6.5	7.8	8.4	6.5	5.7	2.20	3.10
1940	4.26		15	7.1	7.6	8,9	7.7	8.4	8.4	7.4	7.1	7.1
1941	7.1	7.0	7.1	7.1	8.2	7.8	7.8	8.3	7.9	7.3	7.4	7.0
1942	8.6	7.1	6.5	7.8	7.8	7.8	8.7	9.3	9.0	7.9	7.9	8.4
1943	7.8	7.8	7.1	6.5	7.8	9.0	9.7	7.3	6.9	5.1	7.5	7.4
1944	12	11	6.5	7.8	7.8	8.2	7.9	7.9	6.4	8.4	7.6	7.8
1945	7.8	7.8	8.4	9.0	8.4	9.0	9.2	9.2	9.7.	9.0	8.4	8.4

Sandymush Creek near Alexander, N. C.

Location. Water-stage recorder, lat. 35°43°49°, long. 82°40°11°, 0.7 miles downstream from Turkey Creek, 1.3 miles upstream from mouth, and 3½ miles northeast of Alexander, Buncombe County. Datum of gage is 1,732.53 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 79.5 square miles.

Records available. - December 1942 to December 1945.

Extremes. - Maximum discharge, 2,550 million gallons per day July 20, 1944 (gage height, 7.75 feet), from rating curve extended above 452 million gallons per day; minimum, 7.8 million gallons per day Dec. 24, 1943, Jan. 31, 1945, result of low temperature minimum gage height, 2.17 feet Dec. 24, 1943.

Flood of Aug. 30, 1940, reached a stage of 16.7 feet, from floodmarks.

Remarks. - Records good except those for periods of ice effect or no gage-height record, which are fair.

Mean Discharge in Million Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Mean
1942 1943 1944 1945	76.9 22.0 31.3	78.8 70.4 73.6	82.0 94.3 48.1		37.5 26.9 40.6		34.8 28.0 14.9	25.7 22.4 26.6	13.0 16.7 34.9	12.7 17.2 24.6	15.6 16.3 32.2	62.3 17.2 25.6 61.6	39.9 35.0 37.3
Max. Min. Mean	76.9 22.0 43.4	78.8 70.4 74.3	94.3 48.1 74.8	41.3	26.9	33.6 21.3 28.2	34.8 14.9 25.9	26.6 22.4 24.9	34.9 13.0 21.5	24.6 12.7 18.2	32.2 15.6 21.4	62.3 17.2 41.7	39.9 35.0 37.4

Maximum Discharge in Million Gallons per day

						9							Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Max.
1942												495	495
1943	422	292	431	127	68	79	87	127	26	21	42	56	431
1944	67	377	452	113	45	106	313	142	158	65	32	65	452
1945	110	355	140	122	132	47	31	84	167	94	83	227	355
Max.	422	377	452	127	132	106	313	142	167	94	83	495	495
Min.	67	292	140	113	45	47	31	84	26	21	32	56	355
Mean	200	341	341	121	81.7	77.3	144	118	117	60.0	52.3	211	413

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1942 1943 1944 1945	30 14 16	34 14 13	26 30 26	38 32 25	30 19 20	19 17 14	17 12 11	13 9.7 13	10 8.4 12	10 12 16	13 13 18	21 9.7 14 28	9.7 8.4 11
Max. Min. Mean	30 14 20.0	34 13 20.3	30 26 27.3	38 25 31.7	30 19 23.0	19 14 16.7	17 11 13.3	13 9.7 11.9	12 8.l ₁ 10.1	16 10 12.7	18 13 14.7	28 9.7 18.2	8.4 9.70

Sandymush Creek near Alexander, N. C.

			Mean We	ekly Di	scharge	in Mill	ion Gall	ons per d	lay	
Week		7.01.0	7.01.2	701.1.	זטור			,		
Endin		1942	1943 51	1944 28	1945					
Jan.	7 14		33	23	54 24					
	21		33 87	23 23	27					
	28		118	16	26					
Feb.	4		98	14	19					
	11		154	14 33	23					
	18		63	112	148					
	25		39 32	63	90 52					
Mar.	4		32	94	52					
	11		28	59 37	51					
	18		58	37	30					
	25		197	106	30					ļ
Apr.	1		69	196	77					
	ם ל		45	53	42					
	1 8 15 22		45 45 68	53 65 48	27					
			57	46 39	52 44					
May	29 6		37	31)12	· · · · · · · · · · · · · · · · · · ·				
L.C.y	13		37	31 28 28	42 45 56					
	13 20		33	28	56					
	27		47	25	31					
June	3		34	26	21					
	10		37	37	25					
	17		37 2l ₁	33	25 20 25					
	24		211	26	25					
July	.1 8 15 22		36 57	21 15	15					
	8		57	15	14					
	15		33 22	17	14 14 14					
			22	66	14					
Aug.	<u> </u>		25 26	17 20	19 28	· · · · · · · · · · · · · · · · · · ·				
nug.	12		25		47					
	19		25 48	13 53	19			•		
	29 5 12 19 26		17	12						
Sept.	2		14	9.7	19 14					
	9		12	9.0	17					0
	16		10	10	46					
ļ	23		17	13	65					
	2 9 16 23 30		12	13 36 17	17 46 65 19 29			· · ·		
Oct.	71		11	17	29					
	14		11	13	19					
	21 28		15	17	Ţ(
Nov.	4		13 15 14 21 14 14 14 14 14	13 23 17 14 14 15 25 22 20 21	19 17 35 21					
	11		21	111	19					
	18		14	177	26					
	11 18 25 2 9 16		14	15	56					
Dec.	2		14	25	33					
	9	49	14	22	99					
-	16	37 26	14	20	45					
	23	26	15 26	21	33					
Morri	31	133	26		19 26 56 33 99 45 33 76 148					
Maxim Minim			197 10	196 9 . 0	140					
I TITLE I TITLE	ICUH	1	1 10	7.00	1 14	l				1

Ivy River near Marshall, N. C.

Location (revised).- Water-stage recorder, lat. 35°46'10", long. 82°37'16", 0.2 mile downstream from county bridge, 1.9 miles upstream from mouth, and 4 miles southeast of Marshall, Madison County. Datum of gage is 1,700.41 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 158 square miles.

Records available .- May 1934 to December 1945.

Average discharge. - 11 years, 97.1 million gallons per day .

Extremes.- Maximum discharge, 5,740 million gallons per day Aug. 30, 1940 (gage height, 12.67 feet), by slope-area method; minimum, 1.94 million gallons per day Jan. 20, 1940, result of low temperature; minimum gage height, 1.53 feet Dec. 16, 1943, result of low temperature.

Remarks. - Records good except those for periods of ice effect or no gage-height record, which are fair.

1													Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean
1934					44.6	57.2	91.1	43.5	34.2	59.6	78.2	89.8	
1935	158	98.8	276	206	109	62.0	68.5	36.6	35.6	24.6	63.6	33.8	98.8
1936	311	262	409	371	79.5	46.8	51.6	72.4	76.2	123	55.7	122	165
1937	411	199	140	120	106	68.5	49.9	69.1	73.0	91.7	54.2	84.6	122
1938	121	158	265	110	105	85.9	129	58.5	.32.6	19.8	71.1	53.0	101
1939	108	282	176	109	62.1	45.3	34.1	39.8	24.2	21.1	18.7	25.7	77.5
1940	30.0	68.5	105	119	50.5	43.5		287	69.1	31.7	45.5	73.0	81.4
1941	64.0	39.3		80.1	37.9	29.8	156	41.7	20.7	14.3	19.1	28.4	52.1
1942	33.5	85.3	180	49.2	82.0	148	51.3	49.5	58.8	32.2	35.5	153	80.1
1943	202	167	180	103	91.7	53.8	92.4	33.0	19.0	18.5	27.7	29.7	84.6
1944	52.5	201	207	157	74.9	58.6	33.2	38.6	42.5	82.0	52.1	96.9	91.1
1945	128	230	177	167	152	82.0	41.4	63.0	55.3	62.5	81.4	134	114
Max.	411	282	409	371	152	148	156	287	76.2	123	81.4	153	165
Min.	30.0	39.3	90.4	49.2	37.9	29.8	33.2	33.0	19.0	14.3	18.7	25.7	52.1
Mean	147	163	200	145	82.9	65.1	70.9	69.4	45.1	48.4	50.2	77.0	97.1

Ivy River near Marshall, N. C.

Maximum Discharge in Million Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Max.
1934					68	120	572	118	129	320	333	478	
1935	937	238	1020	646	194	150	328	115	138	168	590	43	1020
1936	2370	1250	1310	1890	137	114	116	505	548	567	102	442	2370
1937	1360	409	209	315	262	216	135	134	528	342	93	446	1360
1938	342	293	1260	151	322	198	756	160	55	25	362	124	1260
1939	685	937	597	165	95	101	90	177	67	89	20	52	937
1940	96	245	183	325	81	91	125	2800	313	101	170	301	2800
1941	124	54	202	140	72	116	749	109	82	32	31	66	749
1942	66	405	704	74	262	691	160	81	301	53	74	1030	1030
1943	982	556	678	182	317	202	317	118	59	32	93	120	982
1944	127	698	814	464	146	301	114	129	630	484	143	256	814
1945	525	795	749	598	408	195	68	168	231	297	260	404	795
Max.	2370	1250	1310	1890	408	691	756	2800	630	567	590	1030	2800
Min.	66	54	183	74	68	91	68	81	55	25	20	43	749
Mean	692	535	702	450	197	208	295	3 85	257	209	189	314	1280

			****	illiniani 1) <u> </u>	150 III	1,1111	J11 GG 1.	tons pe	uay			
77		. ,			3.5	_			_		2.7	_	Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Min.
1934					32	30	36	23	17	28	37	41	
1935	65	50	89	95	71	39	28	19	18	16	19	18	16
1936	36	7 8	103	96	47	26	26	27	25	51	34	39	25
1937	164	134	92	7 8	72	39	27	38	25	25	42	25	25
1938	65	7 8	92	72	52	47	42	30	25	18	19	37	18
1939	50	109	76	68	43	26	24	21	11	16	17		
1940	12	412	57	57	36	27	32	33	28	24	31	37	12
1941	42	33	31	47	21	14	28	22	10	10	16	16	10
1942	19	28	39	32	33	46	27	30	18	24	28	40	18
1943	62	72	56	68	56	26	34	15	10	14	19	12	10
1944	33	30	83	91	47	26	16	16	11	28	32	52	11
1945	50	32	.75	65	72	45	30	28	24	32	37	55	24
Max.	164	412	103	96	72	47	42	38	28	51	42	55	25
Min.	12	28	31	32	21	14	16	15	10	10	16	12	10
Mean	54.4	96.0	72.1	69.9	48.5	32.6	29.2	25.2	18.5	23.8	27.6	33.8	16.9

Manl-			Mean	WOOM I	, ====				allons	per d	ay		
Week Endin	ď	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
		1734			652		89						
Jan.	7		167	267		153		23	101	34	149	72	247
•	14		301	247	253	. 87	78	39	54	24	75	41	105
	21		81	691	555	68	81	42	~48	39	241	.66	100
T? - l-	28		130	141	246	172	78	19	56	34	283	37	89
Feb.	4		64	244	250 250	133	355	24	48	40	235	34	54
	11		53	261	250	108	309	43	37	101	302	97	61
)	18		146	375	168	206	405	64	43	123	149	279	413
Mon	25		88	162 146	176 162	193	147	116	35	75	93 68	202	340
Mar.	4		136	140		209	193	109	100	<u>4</u> 8 282	66	294	182
}	11 18		176		174	440	332	79				141	174
			433	142 685	125 128	240 209	147	127	100	236	154	98	90
/\ ~ 70	25		237	788			99 91	97 105		171 90	399	194	112
Apr.	1		384		107	144			125		160	420	326
1	8 .		207	975	94	126	127	114	102	61	90	134	136
t	15		179	299	104	111	116	89	67	54	79	225	78
	22		247	146	92	115	90	146	56	40	119	155	264
Morr	2 9		200	115 92	191	89 67	103 85	129 69	93	38 54	124	110	194
May			101		114				59		76	92	133
	13	10	99	98	90	57	65	54	50	37	121	94	132
	20	43	129	89	151	64	57	45	32	79	105	57	260
T.	27	42	124	60	88	196	50	45	23	153	81	72	127
June	3	54	86	47	104	151	71	37	23	136	59 1,2	58 67	74
4	10	64	73	65	85	82	54	32	23	136	43	67	99
	17	41	55	56	57	55	37	55	49	279	49	72	93
T 3	24	75	61	35	56	89	37	39	25	76	34	56	86
July	1	46	145	30 42	47	90	31	52 45	25	60	98	314	52
	8	48	114	63	65	47	36	65	112	42	155	25	41
	15	166	43	38	41	63	43	50	178	82	90	49	39
	22	84	62	59	39	152	27	48	310	39	57 65	32	42
A	29	70 58	67	32 61	43	280	31	39	74	48	55	26	43 74
Aug.	5		30	61	70	74	27	57 65	41				14
the man of	12	65	30	162	79	100	34	65	41	51	36	58	98
r r	19	48	21	78	52	48	55	548 85	36	51	48 21	48	50 1.5
Cont	26	32	72	28	85	36	39		54	57			45
Sept.		25	24 67	32	68	32	46	616	32	35	16	17	36
	9	26	67	90	172	38	3 0 18	100	35	66	14	16	31
	16	26	41	51	60	36		54	20	44	11	17 21	39
The state of the s	23	26 63	21	48	33 26	28 28	25	36	14	37	34 18	124	114
Oct	<u>30</u> 7	63	18 17	131 105			14 33	32 28	13	95 41	16	61	39 86
Oct.		93 81			34 35	23	19	29		32	16		55
	14 21		18 18	107 240	35 102	19	17	40	13 14	26	19	39 154	40
	28	43 33		68	175	19 19	17	27	16	32	22	90	76
Nor			23 45	53	106	19	17	70	21	41	25	41	46
Nov.	4 11	70 57		7.5 63		104	18				46	36	
	18	57	26 162	63	57	TO4		39 40	17	37 32	24	37	39 61
	25	41 87	43	72 45	50 46	34 116	19 19	34	16 22	32	21	48	162
Doo	2	202	43	45	47	53	19	39	18	38	19	109	84
Dec.						1.7		40				83	183
	9	106	34	120	42	41	19		33	140 78	23 22		350
	16	52	37	107	53	54	20	52 63	23		17	83	359 65
	23	54	30	112 167	65	42	26	63	19	54 340	56	144	205
Mozri	31	71	32		176	74	37 405	136	39 310			420	413
Maxim			433	975	652	440		616		340 24	399 11	16	31
Minim	un .	-	17	28	26	19	14	19	12	24		10	<u></u>

Big Laurel Creek near Stackhouse, N. C.

Location (revised).- Water-stage recorder, lat. 35°55'll", long. 82°45'42", 0.2 mile downstream from Big Hurricane Creek, 0.6 mile upstream from Little Hurrican Creek, 50 feet west of State Highway 208, 3 miles north of Stackhouse, Madison County, and 4 miles upstream from mouth. Datum of gage is 1,595.68 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 126 square miles.

Records available .- May 1934 to December 1945.

Average discharge. - 11, years, 114 million gallons per day.

Extremes.— Maximum discharge, 4,690 million gallons per day Mar. 25, 1935 (gage height, 7.94 feet); minimum, 7.1 million gallons per day Jan. 6, 1942 (gage height, 0.92 foot), result of low temperature; minimum daily, 14 million gallons per day Oct. 9, 1941

Remarks .- Records good except those for periods of ice effect, which are fair.

_	-	-	-	-	1 2100.								VOONLTE
	-	- 1			17.	+			0 1	0 1		70	Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		Nov.	Dec.	Mean
1934					58.2	80.1	115	69.8		75.6	69.1	96.3	
1935	193	145	408	271	120	81.4	165	60.8	39.0	32.7	61.2	38.6	135
1936	344	273	427	359	76.9	46.6		48:4	456.7	125.	67.2		166
1937	421	242	141	132	121	71.1	61.8	147	74.9	116	69.8		143
1938	162	214	297	137	107	110	178	135	55.6	33.5	61.7	79.5	130
1939	113	338	169	125	66.5	66.5	76.2	31.7	27.6	18.7	20.5	28.1	88.5
1940	31.3	78.2	120	130	54.5	45.3	98.2	213	69.1	34.9	40.4		80.1
1941	74.9	46.5	128	96.3	45.9	31.9	171	339	25.8	18.0	19.8	25.2	60.1
1942	35.3	76.9	187	50.8	92.4	94.3	91.1	125	59.5	42.2	52.5		96.9
1943	215	213	204	130	114	64.3	89.1	73.0	36.7	27.4	31.8	47.3	103
1944	78.8	296	268	178	88.5	76.9	34.4	31.2	38.6	75.6	63.4	125	112
1915	172	203	190	126	193	116	129	171	64.1	76.9	105	169	143
Max.	421	338	427	359	193	116	178	339	74.9	125	105	247	166
Min.	31.3	46.5	120	50.8	45.9	31.9	34.4	31.2	25.8		19.8	25.2	60.1
Mean	188	193	231	158	94.8	73.7	105	120	49.3	56.3	55.2	95.7	114

Big Laurel Creek near Stackhouse, N. C.

Maximum Discharge in Million Gallons per day

													Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Max.
1934					84	177	425	276	181	340	180	228	
1935	665	427	2180	599	216	165	1200	134	120	194	335	50	2180
1936	2390	1090	1590	1800	116	134	178	171	326	594	132	384	2390
1937	1410	652	242	238	196	112	110	904	174	665	121	552	1410
1938	458	410	1060	222	218	186	717	548	110	45	229	178	1060
1939	341	853	594	183	95	138	329	68	64	29	30	55	853
1940	106	181	277	411	86	177	269	1920	279	78	111	117	1920
1941	147	68	306	213	85	57	469	49	89	42	43	50	469
1942	101	264	597	81	447	260	245	318	209	82	112	1550	1550
1943	672	769	601	209	256	165	238	287	129	145	97	137	769
1944	214	1110	879	444	134	293	64	98	433	450	190	453	1110
1945	704	629	640	227	460	311	631	617	147	304	329	467	704
Max.	2390	1110	2180	1800	460	311	1200	1920	433	665	335	1550	2390
Min.	101	68	242	81	84	57	64	49	64	29	30	50	469
Mean	655	587	815	421	199	181	406	449	188	239	159	352	1310

			Minim	um Disc	harge	in Mil	Lion G	allons	s per d	ay			
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1934 1935	90	63	122	137	38 85	36 52	37 49	141 35	25 25	38 23	43 27	56 24	23
1936	36	76	119	100	50	27	28	25	23	40	43	43	23
1937	137	146	96	84	81	50	37	39	36	35	52	41	35
1938	84	102	118	98	74	71	52	57	40	30	30	44	30
1939	63	125	89	80	48	32	35	21	18	16	17	17	16
1940	17	25	52	57	36	26	45	52	32	26	32	32	17
1941	37	36	36	51	26	21	34	22	16	14	16	18	14
1942	17	36	41	37	34	49	46	41	36	32	40	65	17
1943	84	101	71	92	77	39	35	30	22	23	21 ₄	21	21
1944	44	41	110	107	59	47	19	19	17	30	30	59	17
1915	68	56	85	76	81	57	52	54	42	41	47	88	41
Max.	137	146	122	137	85	71	52	57	42	41	52	88	41
Min.	17	25	36	37	26	21	19	19	16	14	16	17	14
Mean	62	73	85	84	57	42	39	36	28	29	33	l ₄ 2	23

Big Laurel Creek near Stackhouse, N. C.

Week						110150							
Endin	ıg	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Jan.	7		242	283	612	162	90	23	110	27	211	130	304
0	14		267	318	286	94	82	43	59	23	98	60	151
	21		118	736	576	93	92	43	47	48	230	88	148
	28		183	153	284	287	129	19	82	36	262	50	128
Feb.	4		88	227	248	190	335	25	66	46	271	47	73
	.11		7 5	275	344	136	408	57	44	92	402	232	81
	18		231	372	211	313	484	85	53	103	151	391	345
	25		116	203	209	234	172	105	38	70	133	276	281
Mar.	4		194	167	152	326	147	118	54	47	96	398	195
į	11		247	140	191	464	326	69	162	268	79	192	220
	18		412	147	128	254	145	150	154	255	196	130	99
	25		459	788	127	220	105	152	87	197	407	283	127
Apr.	1		678	749	101	130	109	111	148	89	189	464	285
-	8 15 22		328	924	94	114	156	101	110	58	104	151	121
	15		242	286	113	129	146	76	79	59	114	236	84
	22		290	154	141	158	108	192	60	45	141	182	142
	29		210	123	185	152	92	152	132	39	162	138	151
May	6		110	94	134	97	73	72	72	43	95	113	171
	13		98	90	130	79	64	61	57	37	112	107	234
	20	62	149	84	142	89	62	57	41	68	111	77	287
	27	53	140	59	92	132	67	44	31	203	133	70	135 83
June	3	54	90	49	92	150	91	. 34	28	99	99	77	83
	10	109	113	56	74	107	85	35	32	90	57	76	93
	17	66	80	63	71	103	53	45	-43	149	56	88	112
	24	94	73	36	80	125	58	37	26	71	76	83	202
July	1	59	55	29	56	93	45	73	28	68	78	54	70
	8	55	387	87	78	74	63	79	275	59	150	408	107
	15	208	103	38	56	70	160	88	152	166	63	38	154
	22	125	72	67	48	166	45	130	216	60	46	- 30	127
	29	79	134	39	60	370	48	62	96	92	70	23	115
Aug.	5	88	93	39	58	215	37	117	47	81	81	38	322
	12	47	71	94	114	253	36	166	314	203	87	25	279
	19	105	54	48	76	111	38	242	33	132	134	50	93
	26	67	54 37	27	334	72 61	26 34	83	30	110	41	23 21	83 63
Sept.	2	46	37	28	117	61	34	468	26	58	32	21	63
	9	36	60	73	129	52	32	92	31	54	31	21	52
	16	38	41	30	83	73	20	59	36	41	25	21	63
	23	32	30	29	48	50	30	39	19	53	65	22	91
Oat	30 7	72	26	104	39	47	19	39	18	93	28	96	47
Oct.		120	24	68	48	38	21	32	17	46	23	53	100 68
	14 21	95 56	25	90 26 8	47	32	17	36	17	36	23	43	
	28	46	25		72	32	17	39	16	33	28	145	49
Nor		87	32 56	93 66	254	33	18 20	27 68	20	52 66	32 35	78 37	98 57
Nov.	4 11	71	36	70	151 73	69	19	40	17	53	46		2/
	18	52	125	97	67	36	18	35	17	49	28	33 42	50 88
	25	55	52	ラ1 ピス	60	101	25	34	25	49	25	81	196
Dec.	2	103	52 45	53 45	55	56	21	39	19	58	25	123	112
200.	9	91	41	118	51	47	21	37	29	222	28	86	236
	16	62	43	92	128	88	21	43	24	133	47	82	236 153
	23	76	34	95	102	59	29	45	21	101	29	88	98
	31	124	35	169	238	125	42	67	29	532	87	234	202
Maxim			678	924	612	464	484	468	275	532	407	464	345
Minim			24	27	39	30	17	19	16	23	23	21	47
		L			1)/		05		T				L

Location (revised). Water-stage recorder, lat. 35°31'30", long. 82°50'28", 0.5 mile upstream from bridge on U. S. Highways 19 and 23 at Canton, Haywood County. Datum of gage is 2,572.22 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area.- 133 square miles.

Records available. May 1907 to June 1909 (fragmentary) and December 1928 to December 1945 in reports of Geological Survey. May 1907 to June 1909 (complete) in North Carolina Department of Conservation and Development Bulletin 34 and Tennessee Division of Geology Bulletin 34.

Average discharge. - 18 years (1907-8, 1929-45), 197 million gallons per day.

Extremes.— Maximum discharge, 20,400 million gallons per day Aug. 30, 1940 (gage height, 20.75 feet, from floodmark in gage well); minimum, 16 million gallons per day Dec. 24, 1943 (gage height, 0.30 foot), result of low temperature; minimum daily 28 million gallons per day Oct. 26, 1941, Dec. 17, 1943.

Remarks. - Occasional diurnal fluctuation and slight regulation caused by gristmill and small reservoir above station.

-		,		Tale car	DISCIR	11 EC 11	1 1917 7 7 7	Lon da.	1 5110	oci da	у		
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Mean
1907 1908 1909	257 280	340 430	271 545	237 273	207 389	160 160 446	122 1 7 2	80.7 218	130 161	80.7 236	131 226	209 265	228
1928 19 2 9 1930	269 152	317 173	711 216	243 155	359 159	213 85.3	142 54.5	83.3 39.5	203 78.8	333 45.5	377 106	101 187 131	286 116
1931 1932 1933 1934 1935	149 364 351 175 364	125 311 328 132 192	187 251 293 425 271	1422 236 313 207 222	178 259 273 144 168	90.4 123 110 284 88.5	74.9 69.8 79.5 151	94.3 93.7 73.0 85.9 244	56.1 51.8 174 72.4 145	36.4 351 68.5 126 69.8	292 63.9 198	250 563 65.9 211	143 247 182 185 180
1936 1937 1938 1939 1940	616 657 183 274 61.4	432 353 162 743	176 266 395 262	566 242 223 239 351	152 164 165 153 160	85.9 109 166 125 119	91.7 83.3 220 85.9 163	98.2	101 185 82.7 60.4 273	334 262	133 142 182 39.1	251 138 109 41.7	273 220 163 191 239
1941 1942 1943 1944 1945	162 159 362 130 194	96.9 267 361 342 282	145 384 313 444 239	174 160 287 335 366	85.3 261 236 204 245	62.3 188 169 141 116	227 127 205 85.3 82.7	83.3 143 100 68.5 84.6	51.7 176 64.3 80.7 229	41.6 106	66.5 81.4 67.8 98.8 172	183 371	116 202 189 180 198
Max. Min. Mean	657 61.4 272	743 96.9 291	711 145 327	566 155 276	389 85.3 208	446 62.3 152	227 54.5 124	953 39.5 156	273 51.7 125	351 36.կ 13կ	377 39.1 140	563 41.7 191	286 116 197

Pigeon River at Canton, N. C.

Maximum Discharge in Million Gallons per day

					501141 80				10 PO1				Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Max.
1907 1908 1909	620 540	2360 801	472 1300	891 397	311 1200	269 218 2140	194 311	105 756	1360 326	113 801	368 382	711 711	2360
1928 1929 1930	704 235	1360 375	2920 698	437 345	643 443	349 121	226 83	164 85	2000 265	1540 70	1010 448	218 287 585	2920 698
1931 1932	573 1080	251 503	571 814	1620 557	279 1160	152 286	161 142	223 264	176 160	60 2460	221 756	730 2480	1620 2480
1933	730 859	553 1130	559 1800	1800 328	762 290	255 643	117 295	275 127	711 176 504	200 575 333	151 756 898	112 775 252	1800 1800 1780
1935 1936	1780 2640	366 1940	982 1270	564 1960	247 238	136 161	<u>353</u> 599	1140 200	1150	2560	218	1260	2640
1937	2190	672	298	579	282	189	165	594	544	1710	198	311	2190
1938	425	235	698	401	386	330	917	298	228	61	969	264	969
1939	1830	1830	1170	447	207	236	171	1300	93	98	52	76	1830
1940	231	309	556	1770	266	215	795	8270	956	157	214	1210	8270
1941	297	140	258	499	138	127	872	147	64	88	192	782	872
1942	386	1160	1120	242	1260	489	269	298	775	140	142	2710	2710
1943	969	1070	698	1290	495	529	399	191	205	90	344	293	1290
1944	532	1100	1210	592	324	280	157	166	508	291	498	327 685	1210
1945	775	90l ₄	610	1690	470	187	120	199	1300	711	470		1690
Max.	2640	2360	2920	1960	1260	2140	917	8270	2000	2560	1010	2710	8270
Min.	231	140	258	242	138	121	83	85	64	60	52	76	698
Mean	914	898	948	864	495	366	334	779	605	635	436	739	2174

Minimum Discharge in Million Gallons per day

Year Jan, Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Min. 1907 1908 171 171 218 152 152 132 113 113 113 117 171 171 81 1909 19h 171 297 218 218 218 218 113 113 113 117 171 81 1928 199 19h 179 339 179 26h 130 107 5h 51 117 200 1h5 51 1929 9h 179 339 179 26h 130 107 5h 51 117 200 1h5 51 1930 129 125 107 109 99 59 42 30 28 38 39 68 28 1931 90 78 115 158 <				Minir	num Dis	charge	e in Mi.	IIIon (i allon:	s per o	day			
1907 1908 171 171 218 152 152 132 113 113 113 113 81 171 171 81		_					_						_	Yearly
1908 171 171 218 152 152 132 113 113 113 113 171 171 81 1909 194 171 297 218 219 209 219 215 107 109 264 130 107 54 51 117 200 145 51 1930 129 125 107 109 99 59 42 30 28 38 39 68 28 28 28 28 218	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.				Dec.	Min.
1909 194 171 297 218 218 218 218	1907						132	97	68	68	68	81	97	
1909 194 171 297 218 218 218 218		171	171	218	152	152			113	113	81	171	171	81
1928 179 339 179 264 130 107 54 51 117 200 145 51 1930 129 125 107 109 99 59 42 30 28 38 39 68 28 1931 90 78 115 224 109 60 45 64 38 30 30 63 30 1932 178 221 151 158 163 60 50 45 32 45 169 151 32 1933 179 167 194 158 155 74 54 50 62 50 50 50 50 1934 57 56 184 144 103 187 92 63 45 57 85 125 45 1935 142 129 163 103 111 63 57 61 73 48 63 88 48 1936 97 238 187 220 97 54 48 63 50 110 94 96 48 1937 344 238 102 119 113 75 62 62 72 69 103 78 62 1938 120 129 132 141 102 104 70 76 55 43 43 77 43 1939 103 339 190 172 120 79 59 52 47 38 36 34 34 1940 32 48 158 141 109 78 69 89 127 63 57 74 32 1941 166 69 63 106 64 46 68 57 30 28 40 42 28 1942 98 123 155 109 92 109 81 88 81 81 65 115 65 1943 176 171 138 164 154 98 116 61 43 40 44 28 28 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 18x 34 34 34 34 34 34 34 3	1909	194	171	297			218							
1929 94 179 339 179 264 130 107 54 51 117 200 145 51 1930 129 125 107 109 99 59 42 30 28 38 39 68 28 1931 90 78 115 224 109 60 45 64 38 30 30 63 30 1932 178 221 151 158 163 60 50 45 32 45 169 151 32 1933 179 167 194 158 155 74 54 50 62 50 50 50 50 1934 57 56 184 144 103 187 92 63 45 57 85 125 45 1935 142 129 163 103 111 63 57 61 73 48 63 88 48 1936 97 238 187 220 97 54 48 63 50 110 94 96 48 1937 344 238 102 119 113 75 62 62 72 69 103 78 62 1938 120 129 132 141 102 104 70 76 55 43 43 77 43 1939 103 339 190 172 120 79 59 52 47 38 36 34 34 1940 32 48 158 141 109 78 69 89 127 63 57 74 32 1941 116 69 63 106 64 46 68 57 30 28 40 42 28 1944 65 72 192 237 154 78 56 44 38 54 57 90 38 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 Max. 344 339 339 237 264 218 116 113 127 117 200 171 81 Min. 32 48 63 102 64 46 42 30 28 28 30 28 28														•
1929 94 179 339 179 264 130 107 54 51 117 200 145 51 1930 129 125 107 109 99 59 42 30 28 38 39 68 28 1931 90 78 115 224 109 60 45 64 38 30 30 63 30 1932 178 221 151 158 163 60 50 45 32 45 169 151 32 1933 179 167 194 158 155 74 54 50 62 50 50 50 50 1934 57 56 184 144 103 187 92 63 45 57 85 125 45 1935 142 129 163 103 111 63 57 61 73 48 63 88 48 1936 97 238 187 220 97 54 48 63 50 110 94 96 48 1937 344 238 102 119 113 75 62 62 72 69 103 78 62 1938 120 129 132 141 102 104 70 76 55 43 43 77 43 1939 103 339 190 172 120 79 59 52 47 38 36 34 34 1940 32 48 158 141 109 78 69 89 127 63 57 74 32 1941 116 69 63 106 64 46 68 57 30 28 40 42 28 1944 65 72 192 237 154 78 56 44 38 54 57 90 38 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 Max. 344 339 339 237 264 218 116 113 127 117 200 171 81 Min. 32 48 63 102 64 46 42 30 28 28 30 28 28	1928												76	
1930 129 125 107 109 99 59 42 30 28 38 39 68 28 1931 90 78 115 224 109 60 45 64 38 30 30 63 30 1932 178 221 151 158 163 60 50 45 32 45 169 151 32 1933 179 167 194 158 155 74 54 50 62 50 50 50 50 1934 57 56 184 144 103 187 92 63 45 57 85 125 45 1935 142 129 163 103 111 63 57 61 73 48 63 88 48 1936 97 238 187 220 97 54 48 63 50 110 94 96 48 1937 344 238 102 119 113 75 62 62 72 69 103 78 62 1938 120 129 132 141 102 104 70 76 55 43 43 77 43 1939 103 339 190 172 120 79 59 52 47 38 36 34 34 1940 32 48 158 141 109 78 69 89 127 63 57 74 32 1941 116 69 63 106 64 46 68 87 30 28 40 42 28 1944 65 72 192 237 154 78 56 44 38 54 57 90 38 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 180 65 72 192 237 154 78 56 44 38 54 57 90 38 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 180 1		9년	179	339	179	26Ц	130	107	54	51	117	200		51
1931 90 78 115 224 109 60 45 64 38 30 30 63 30 1932 178 221 151 158 163 60 50 45 32 45 169 151 32 1933 179 167 194 158 155 74 54 50 62 50 50 50 50 1934 57 56 184 144 103 187 92 63 45 57 85 125 45 1935 142 129 163 103 111 63 57 61 73 48 63 88 48 1936 97 238 187 220 97 54 48 63 50 110 94 96 48 1937 344 238 102 119 113 75 62 62 72 69 103 78 62 1938 120 129 132 141 102 104 70 76 55 43 43 77 43 1939 103 339 190 172 120 79 59 52 47 38 36 34 34 1940 32 48 158 141 109 78 69 89 127 63 57 74 32 1941 116 69 63 106 64 46 68 57 30 28 40 42 28 1942 98 123 155 109 92 109 81 88 81 81 65 115 65 1943 176 171 138 164 154 98 116 61 43 40 44 28 28 1944 65 72 192 237 154 78 56 44 38 54 57 90 38 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 180 164 152 158 143 80 63 45 43 74 87 140 43 180 1														
1932 178 221 151 158 163 60 50 45 32 45 169 151 32 1933 179 167 194 158 155 74 54 50 62 50 50 50 50 1934 57 56 184 144 103 187 92 63 45 57 85 125 45 1935 142 129 163 103 111 63 57 61 73 48 63 68 48 1936 97 238 187 220 97 54 48 63 50 110 94 96 48 1937 344 238 102 119 113 75 62 62 72 69 103 78 62 1938 120 129 132 141 102 104 70 76 55 43 43 77 43 1939 103 339 190 172 120 79 59 52 47 38 36 34 34 1940 32 48 158 141 109 78 69 89 127 63 57 74 32 1941 116 69 63 106 64 46 68 57 30 28 40 42 28 1942 98 123 155 109 92 109 81 88 81 81 65 115 65 1943 176 171 138 164 154 98 116 61 43 40 44 28 28 1944 65 72 192 237 154 78 56 44 38 54 57 90 38 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 180			78					45		38				
1933 179		178	221	151	158	163	60		45	32	45	169	151	
1934 57 56 184 144 103 187 92 63 45 57 85 125 45 1935 142 129 163 103 111 63 57 61 73 48 63 88 48 1936 97 238 187 220 97 54 48 63 50 110 94 96 48 1937 344 238 102 119 113 75 62 62 72 69 103 78 62 1938 120 129 132 141 102 104 70 76 55 43 43 77 43 1939 103 339 190 172 120 79 59 52 47 38 36 34 34 1940 32 48 158 141 109 78 69 89 127 63 57 74 32 1941 116 69 63 106 64 46 68 57 30 28 40 42 28 1942 98 123 155 109 92 109 81 88 81 81 65 115 65 1943 176 171 138 164 154 98 116 61 43 40 44 28 28 1944 65 72 192 237 154 78 56 44 38 54 57 90 38 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 Max. 344 339 339 339 237 264 218 116 113 127 117 200 171 81 Min. 32 48 63 102 64 46 42 30 28 28 28 30 28 28		179	167	194	158	155	74				50	50	50	50
1935 142 129 163 103 111 63 57 61 73 48 63 88 48 1936 97 238 187 220 97 54 48 63 50 110 94 96 48 1937 344 238 102 119 113 75 62 62 72 69 103 78 62 1938 120 129 132 141 102 104 70 76 55 43 43 77 43 1939 103 339 190 172 120 79 59 52 47 38 36 34 34 1940 32 48 158 141 109 78 69 89 127 63 57 74 32 1941 116 69 63 106 64 46 68 57 30 28 40 42 28 1942 98 123 155 109 92 109 81 88 81 81 65 115 65 1943 176 171 138 164 154 98 116 61 43 40 44 28 28 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 Max. 344 339 339 237 264 218 116 113 127 117 200 171 81 Min. 32 48 63 102 64 46 42 30 28 28 30 28 28										45				
1936 97 238 187 220 97 54 48 63 50 110 94 96 48 1937 344 238 102 119 113 75 62 62 72 69 103 78 62 1938 120 129 132 141 102 104 70 76 55 43 43 77 43 1939 103 339 190 172 120 79 59 52 47 38 36 34 34 1940 32 48 158 141 109 78 69 89 127 63 57 74 32 1941 116 69 63 106 64 46 68 57 30 28 40 42 28 1942 98 123 155 109 92 109 81 88 81 81 65 115 65 1943 176 171 138 164 154 98 116 61 43 40 44 28 28 1944 65 72 192 237 154 78 56 44 38 54 57 90 38 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 Max. 344 339 339 237 264 218 116 113 127 117 200 171 81 Min. 32 48 63 102 64 46 42 30 28 28 30 28 28								57						
1938 120 129 132 141 102 104 70 76 55 43 43 77 43 1939 103 339 190 172 120 79 59 52 47 38 36 34 34 1940 32 48 158 141 109 78 69 89 127 63 57 74 32 1941 116 69 63 106 64 46 68 57 30 28 40 42 28 1942 98 123 155 109 92 109 81 88 81 81 65 115 65 1943 176 171 138 164 154 98 116 61 43 40 44 28 28 1944 65 72 192 237 154 78 56 44 38 54 57 90 38 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 Max. 344 339 339 237 264 218 116 113 127 117 200 171 81 Min. 32 48 63 102 64 46 42 30 28 28 30 28 28	1936	97	238	187	220	97	54		63	50	110	94	96	48
1939 103 339 190 172 120 79 59 52 47 38 36 34 34 1940 32 48 158 141 109 78 69 89 127 63 57 74 32 1941 116 69 63 106 64 46 68 57 30 28 40 42 28 1942 98 123 155 109 92 109 81 88 81 81 65 115 65 1943 176 171 138 164 154 98 116 61 43 40 44 28 28 1944 65 72 192 237 154 78 56 44 38 54 57 90 38 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 Max. 344 339 339 237 264 218 116 113 127 117 200 171 81 Min. 32 48 63 102 64 46 42 30 28 28 30 28 28	1937	344	238	102	119	113	75	62	62	72	69	103	78	
1940 32 48 158 141 109 78 69 89 127 63 57 74 32 1941 116 69 63 106 64 46 68 57 30 28 40 42 28 1942 98 123 155 109 92 109 81 88 81 81 65 115 65 1943 176 171 138 164 154 98 116 61 43 40 44 28 28 1944 65 72 192 237 154 78 56 44 38 54 57 90 38 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 Max. 344 339 339 237 264 218 116 113 127 117 200 171 81 Min. 32 48 63 102 64 46 42 30 28 28 30 28 28	1938	120	129	132	141	102	104			5 5	43	43		43
1940 32 48 158 141 109 78 69 89 127 63 57 74 32 1941 116 69 63 106 64 46 68 57 30 28 40 42 28 1942 98 123 155 109 92 109 81 88 81 81 65 115 65 1943 176 171 138 164 154 98 116 61 43 40 44 28 28 1944 65 72 192 237 154 78 56 44 38 54 57 90 38 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 Max. 344 339 339 237 264 218 116 113 127 117 200 171 81 Min. 32 48 63 102 64 46 42 30 28 28 30 28 28	1939	103	339	190	172	120	79	59	52	47	38	36	34	34
1941 116 69 63 106 64 46 68 57 30 28 40 42 28 1942 98 123 155 109 92 109 81 88 81 81 65 115 65 1943 176 171 138 164 154 98 116 61 43 40 44 28 28 1944 65 72 192 237 154 78 56 44 38 54 57 90 38 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 Max. 344 339 339 237 264 218 116 113 127 117 200 171 81 Min. 32 48 63 102 64 46 42 30 28 28 30 28 28	1940	32	48	158	141	109	78	69	89	127	63	57	74	32
1943 176 171 138 164 154 98 116 61 43 40 44 28 28 1944 65 72 192 237 154 78 56 44 38 54 57 90 38 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 182 183	1941	116	69	63	106	64	46	68	57	30		40	42	
1944 65 72 192 237 154 78 56 44 38 54 57 90 38 1945 90 84 152 158 143 80 63 45 43 74 87 140 43 140			123											
1945 90 84 152 158 143 80 63 45 43 74 87 140 43 43 84 85 86 86 86 86 86 86 86	1943		171	138	164							44		
Max. 344 339 339 237 264 218 116 113 127 117 200 171 81 Min. 32 48 63 102 64 46 42 30 28 28 30 28 28		65							44	38		57		38
Max. 344 339 339 237 264 218 116 113 127 117 200 171 81 Min. 32 48 63 102 64 46 42 30 28 28 30 28 28	1945	90	84	152	158			63	45		74		140	43
Min. 32 48 63 102 64 46 42 30 28 28 30 28 28	Max.	344	339	339	237	264			113	127		200		
Mean 130 148 170 159 133 95.8 71.0 62.4 57.7 59.7 79.7 90.4 43.7	Min.					64								
	Mean	130	148	170	159	133	95.8	71.0	62.4	57.7	59.7	79.7	90.4	43.7

Pigeon River at Canton, N. C.

Mean Weekly Discharge in Million Gallons per day

Week				n Week.									
Endin	g	1907	1908	1909	1928	1929	1930	1931	1932	1933	1934	1935	1936
Jan.	7		271	339		314	158	214	412	524	291	203	659
	14		368	255		260	147	165	501	430	238	736	628
	21		242	312		236	157	139	304	267	119	275	891
	28		180	222		280	152	104	202	255	96	300	428
Feb.	4		194	187		208	174	87	433	206	82	179	508
	ıī		189	357		279	222	107	313	312	76	156	450
	18		711	502		209	156	152	287	367	74	256	448
	25		266	573		257	141	134	313	401	87	177	340
Mar.	4		222	383		743	123	167	225	225	762	194	276
mar.	11		244	743		652	296	180	200	293	464	215	230
	18		242	594		1210	202	140	176	267	220		220
												477	229
A	25		353	436		594	244	137	298	406	250	227	445
Apr.	l		264	498		397	171	322	395	244	468	223	866
	8		191	309		264	205	576	309	215	258	256	1090
	15		163	269		222	160	316	216	191	225	171	613
	22		227	264		196	144	770	172	622	173	210	347
	29		367	236		271	118	385	189	249	162	247	271
May	6		239	368		393	109	239	430	339	151	173	211
	13		259	245		415	145	220	204	370	127	186	178
	20		199	321		318	247	160	193	232	147	196	147
	27	172	169	638		317	153	138	234	202	117	152	115
June	3	187	152	402		311	107	112	198	149	212	114	96
	10	178	173	885		248	101	90	137	113	345	100	96
	17	148	171	353		192	89	103	163	107	253	91	101
	24	142	163	251		153	78	80	102	103	338	83	78
July	1	145	132	236		211	67	75	65	105	220	67	78 63
	8	131	224			145	56	72	93	87	192	74	72
	15	124	198			149	56 59 52	59	74	76	159	79	60
	22	138	142			138	52	74	63	92	124	174	99
	29	100	141			129	48	93	53	66	132	185	77
Aug.	5	85	130			134	41	96	159	71	103	87	99 55 206
nug o	12	84	159			2)4 2)4	36	98	92	56	98	85	112
	19	85	138			95 83	38	75	88	76	81	296	89
		82				67	70		50	10	80		
C ±	26	83	378			65 57	50 32	120	59 46	59 111	68	507	70 89
Sept.	2	68	253			21	34	73	40	711	60	180	09
	9	73	234			63	35	89	45	359	55	248	78
	16	68	161			79	108	49	36	193	92	148	65
	23	259	127			104	117	44	36	97	74	103	61
	30	136	113			612	70	41	93	69	72	82	213
Oct.	7	103	105			665	47	36	118	85	158	65	152
	14	78	202			187	49	42	68	55	191	60	260
	21	68	148			223	41	34	930	83	104	56	775
	28	72	384			313	40	32	289	59	77	54	223
Nov.	4	90	406			495	48	38	393	56	168	112	154
	11	99	242			337	51	31	267	83	138	80	152
	18	84	216			406	219	30	191	56	94	324	148
	25	218	191			291	109	88	346	60	248	113	114
Dec.	2	143	171			262	81	59	256	50	402	124	102
0	9.	107	297			201	200	249	167	73	288	97	255
	16	216	264		99	161	110	293	512	58	165	152	185
	23	244	241		109	185	89	253	463	69	151	118	183
	31	284	250		87	173	134	250	1130	67	140	94	398
Marin		204			01	1210	296	576		622	762	736	1090
Maxim			711						1130				
Minim	um		105		L	57	32	30	36	50	55	54	55

Pigeon River at Canton, N. C.

Mean Weekly Discharge in Million Gallons per day (continued)

Week		Mica	II WEEK	Ty DIS	Cital ge	TII TAYT	111011	Tarron.	ber	day (co	TIGHTIGE	۷)	
Endin	g	1937	1938	1939	1940	1941	1942	1943	1944	1945			
Jan.	7	1070	183	284	39	229	225	388	195	348			
	14	419	146	200	72	148	126	218	101	178			
	21	678	123	177	85	150	155	420	147	154			
	28	527	258	178	53	140	129	385	96	131			
Feb.	4	453	218	807	50	114	151	393	81	99			
	11	426	161	788	110	102	264	627	186	108			
4	18	324	138	1030	96	112	390	313	441	346			
1	25	319	170	448	182	81	260	225	349	476			
Mar.	4	228	151	591	318	79	168	168	.250	3 09			
	11	196	299	641	262	153	468	165	342	237			
1	18	204	308	350	220	150	480	293	244	171			
	25	134	275	237	209	147	408	507	556	180			
Apr.	ı	136	240	253	250	165	290	372	711	337			
	8	252	257	251	254	275	200	229	359	278			
	15	242	273	200	212	169	178	198	371	173			
1	22	180	208	260	620	133	134	445	299	595			
	29	311	163	245	348	134	121	287	289	435			
May	6	226	136	170	222	98	123	187	235	329			
	13	171	112	148	175	103	98	262	196	239			
	20	165	145	131	148	81	355	202	194	289			
	27	130	185	163	132	72	474	304	202	198			
June	3	128	296	171	107	68	205	187	194	143			
1	10	120	188	161	101	60	219	150	207	129			
	17	100	123	124	168	71	256	163	143	124		ı	
	24	118	163	100	120	51	147	109	104	114			
July	8	78	127	89	90	65	122	277	81	89			
	۵۲	85	96	90	118	313	103	307	87	84			
	15 22	75	83	102	130 282	227	149	229	101	83			
	29	76 80	256 459	74 78	134	275 143	97 79	154	94 67	78 85			
Azze	5	94	253	73	118	118	187	136 114		123	-		
Aug.	12	99	196	68	423	94	157	116	91 77				
	19	120	132	266	1990	71	136	132	71	99 74			
	26	111	92	152	297	69	132	78	48	68			
Sept.	2	280	80	109	169	67	99	63	48	52			
ocpo.	9	307	129	73	404	57	242	56	44	98			
	16	196	79	56	222	52	143	46	65	372			
	23	114	61	52	167	52	99	104	90	360]		
	30	86	61	51	133	45	234	54	130	134			
Oct.	7	146	53	61	125	43	130	47	96	129		altov e seles terre	
	14	96	47	43	112	39	117	45	68	94			
	21	508	46	41	90	39	92	52	113	84			
	28	307	46	39	78	47	96	54	94	224			
Nov.	4	205	43	38	95	74	95	53	68	110			
	11	142	300	39	65	61	83	120	70	99			
	18	147	94	37	114	43	72	59	65	172			
	25	109	266	43	81	80	78	50	76	276			
Dec.	2	140	125	41	105	56	107	45	213	169			
	9	103	106	38	92	242	268	49	132	202			
	16	101	98	36	94	117	167	41	115	256			
	23	160	83	41	125	149	137	34	107	171			
	31	189	142	49	401	255	891	110	199	398			
Maxim		1070	459	1030	1990	313	891	627	711	595			
Minim	um	75	43	36	39	. 39	72	34	44	52	l		

Pigeon River near Hepco, N. C.

Location (revised).- Water-stage recorder, lat. 35°38'07", long. 82°59'22", 0.8 mile downstream from Jonathan Creek, 2.4 miles upstream from Fines Creek and Hepco, Haywood county. Datum of gage is 2,335.95 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 350 square miles.

Records available .- July 1927 to December 1945.

Average discharge. - 18 years, 420 million gallons per day

Extremes. - Maximum discharge, 21,100 million gallons per day Aug. 30, 1940 (gage height, 15.82 feet, from floodmark in gage house), from rating curve extended above 6,850 million gallons per day on basis of slope-area determinations at gage heights 14.94 and 15.82 feet; minimum, 52 million gallons per day Sept. 30, 1941 (gage height, 0.82 foot).

Remarks. - Occasional slight regulation at low flow by small reservoirs above station.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Mean
1927							200	292	171	205	249	756	
1928	444	392	497	659	902	618	531	950	784	461	309	251	567
1929	51,8	703	1586	598	883	537	395	217	351	599	717	443	632
1930	395	459	571	426	443	238	151	111	202	124	229	253	299
1931	326	282	350	835	370	220	198	207	132	90.4	135	466	301
1932	736	736	535	496	455	245	166	251	120	576	490	1373	516
1933	863	937	652	577	630	283	202	197	333	156	136	159	424
1934	343	291	953	411	279	444	323	225	166	271	338	450	375
1935	683	449	632	598	408	232	255	388	228	143	330	225	380
1936	1402	1101	1048	1298	380	213	220	222	224	576	275	501	615
1937	1470	823	472	556	398	274	226	329	371	445	293	298	495
1938	422	391	644	506	371	367	425	297	182	116	337	230	357
1939	470	1322	831	527	341	264	167	236	128	101	105	125	379
1940	125	293	499	530	260	244	370	1451	519	222	210	292	419
1941	304	206	325	322	183	135	465	202	114	91.1	138	265	230
1942	278	492	756	328	444	315	266	301	329	213	176	698	383
1943	733	806	709	574	466	343	417	242	147	118	149	139	401
1944	252	754	937	684	426	276	189	145	165	189	203	282	373
1945	405	636	549	671	497	245	198	206	414	249	345	512	409
Max.	1470	1322	1586	1298	902	618	531	1451	784	599	717	1373	632
Min.	125	206	325	322	183	135	1 51	111	114	90.4		125	230
Mean	567	615	697	589	452	305	282	340	267	260	272	406	420

Pigeon River near Hepco, N. C.

Maximum Discharge in Million Gallons per day

													Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Max.
1927							248	904	292	1030	1400	2570	
1928	872	749	2360	1140	2480	3150	975	7430	2310	1430	641	374	7430
1929	1320	3560	4750	924	1630	975	652	425	2840	2800	1480	630	4750
1930	543	937	1140	749	1020	310	225	268	527	233	743	599	1140
1931	840	528	840	2600	541	413	484	426	421	165	246	1360	2600
1932	2120	1250	1860	1280	2280	430	404	820	317	4750	1100	7620	7620
1933	1940	1850	982	2480	1320	620	314	608	879	285	252	242	2480
1934	1430	2820	4840	711	503	1080	603	313	308	1100	982	1380	4840
1935	3590	904	2450	1320	571	320	494	1430	557	498	2120	358	3590
1936	6590	4260	3160	4520	575	329	1000	350	1910	3610	455	1930	6590
1937	4750	1420	665	1340	575	396	385	795	1290	2360	391	698	4750
1938	904	536	1730	872	795	598	1410	478	317	155	1160	484	1730
1939	2330	3260	2030	685	493	459	309	1500	194	205	145	218	3260
1940	397	711	975	2240	360	370	1320	11000	1400	281	508		11000
1941	475	297	499	685	281	281	1570	541	204	260	339	717	1570
1942	564	1650	2220	487	1550	579	530	614	1220	287	249	4200	4200
1943	2230	2710	1800	1840	885	762	891	599	376	213	448	446	2710
1944	930	2310	2620	1300	646	456	346	287	1150	621	717	736	2620
1945	1260	1600	1450	2240	736	344	350	438	1630	988	833	1110	2240
Max.	6590	4260	4840	4520	2480	3150	1570	11000	2840	4750	2120	7620	11000
Min.	397	297	499	487	281	281	225	268	194	155	145	218	1140
Mean	1840	1740	2020	1520	958	660	658	1540	955	1120	748	1420	4170

			**********	ium Dis	01101 6	111 111		dallon	o por	iay			particular (
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
	vaii.	1.60.	Mai o	npi .	Billy	oune							MILII o
1927	000	200	0/0	1.60	۲۵۵	201	178	168	127	127	142	292	
1928	292	308	262	460	532	324	341	374	357	234	248	222	222
1929	262	391	827	391	610	341	276	159	151	251	433	368	151
1930	349	304	324	307	280	170	119	76	70	96	107	152	70
1931	182	209	240	419	258	138	122	148	88	76	79	165	76
1932	387	464	321	321	271	152	110	118	76	107	318	321	76
1933	483	382	503	318	379	202	151	126	154	116	112	112	112
1934	171	144	349	258	207	297	204	165	120	135	189	317	120
1935	374	341	377	371	287	174	154	154	136	115	126	168	115
1936	181	536	443	536	209	137	129	137	120	229	206	206	120
1937	840	556	363	349	281	171	147	172	168	175	219	168	147
1938	284	329	320	363	233	249	189	172	127	106	107	172	106
1939	214	665	484	400	284	171	111	125	101	84	90	86	84
1940	67	90	326	282	218	171	153	228	287	181	155	156	67
1941	245	156	147	231	131	94	145	125	61	63	90	91	61
1942	161	233	337	231	185	213	164	187	173	138	153	275	138
1943	388	401	326	406	349	215	231	145	108	101	111	78	78
1944	155	153	424	505	311	160	125	101	85	116	122	168	85
1945	194	174	355	355	292	167	147	112	116	156	175	344	112
Max.	840	665	827	536	610	341	341	374	357	251	433	368	222
Min.	67	90	147	231	131	94	110	76	61	63	79	78	61
Mean	290	324	374	361	295	197	168	157	138	137	167	203	108

Mear	n Weekly	Dischar	ge in	Million	Gallons	per	day
			Ī				1

1777-01-		Mean	n Weekly	DISCHA	itge m	MITITIO	Gallon	s per d	ay	
Week	1007	3000	3000	7020	7007	7.020	7.022	7.021	ם מסר	7026
Ending	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Jan 7		550	530	406	433	769	1290	510	464	1420
14		. 477	526	370	421	_90	950	444	1190	1300
21		396	526	410	272	599	717	258	505	2160
28		388	633	404	228	460	642	227	665	1050
Feb. 4		355	446	455	210	1100	517	185	402	1130
11		460	613	582	258	795	924	160	362	1190
18		406	475	418	337	704	1150	162	598	1190
25		373	577	379	295	685	1080	176	391	911
Mar. 4		300	1750	357	310	481	659	1930	472	711
11		436	1770	704	322	428	591	1100	502	549
18		475	2200	508	278	367	599	412	1120	536
25		428	1380	698	293	619	827	489	500	1090
Apr. 1		808	969	483	577	879	617	930	532	2260
8		652	678	578	1270	678	471	459	678	2430
15		724	561	422	645	444	384	472	523	1410
22			501							
(539		395	749	343	963 536	409	619	801
29 May 6		717	616	323	736	410	516	299	579	642
, ,		644	846	304	452	853	678	284	425	510
13		1520	1030	415	437	377	911	258	446	450
20		594	795	672	349	302	548	288	465	387
27		898	846	433	313	353	477	231	372	286
June 3		678	859	297	266	321	376	362	291	222
10		672	596	276	214	257	293	540	264	254
17		528	455	240	253	294	284	434	229	245
24		386	399	232	217	234	271	496	218	182
July 1		943	530	185	165	167	269	347	185	152
8		621	408	150	186	247	211	364	211	190
15		569	410	171	142	168	203	383	187	171
22		364	423	152	189	138	211	276	278	259
29		467	335	132	278	125	179	276	360	144
Aug. 5	240	576	326	101	217	434	195	258	218	391
12	392	483	238	105	210	228	160	244	202	256
19	350	2310	212	105	175	236	182	217	395	207
26	205	678	185	156	252	157	156	216	756_	156
Sept. 2	234	595	164	81	165	122	322	176	281	205
9	225	1550	178	106	216	111	572	141	348	205
16	165	659	180	262	113	89	399	190	240	181
23	151	536	243	290	101	88	205	171	174	144
30	133	370	859	184	97	192	158	164	147	387
Oct. 7	131	331	1120	126	83	269	185	330	127	318
14	390	256	363	132	101	161	138	396	126	525
21	185	646	356	107	81	141	175	224	127	1190
28	147	644	631	103	78	471	141	176	131	395
Nov. 4	151	350	762	162	107	631	120	322	200	287
11	152	299	641	132	116	426	186	271	180	305
18	407	258	846	412	169	328	120	205	659	320
25	280	380	610	238	154	581	140	388	267	238
Dec. 2	280	293	542	196	149	475	116	643	311	215
9	846	266	478	322	362	363	164	553	224	512
16	937	237	395	2314	607	1100	136	350	276	386
23		254	452	192	505	1050	161	367	215	411
31	775 567	254 225	452	262	462		183	360	178	743
	201					3020			1190	2430
Maximum Minimum		2310	2200	704	1270	3020 88	1290	1930		
Minimum		225	164	81	78	00	116	141	126	144

Pigeon River near Hepco, N. C.

Mean Weekly Discharge in Million Gallons per day (continued)

Week		can	i contry i	Jischarg	C 111 1913	1111011	10110110	per day	(00110	Incoar	
Ending	1937	1938	1939	1940	1941	1942	1943	1944	1945	Ą	
Jan. 7	2260	477	427	107	388	358	724	377	698		
14	956	357	379	137	264	220	450	208	375		
21	1590	297	369	178	282	285	820	266	336		
28	1220	534	377	96	300	245	833	189	287		
Feb. 4	1100	472	1260	98	245	278	879	169	214		
11	956	373	1380	203	214	494	1450	384	244		
18	762	342	1820	308	232	652	652	917	891		
25	704	430	904	402	172	506	485	769	1000		
Mar. 4	576	388	1040	614	194	360	387	1230	665		
11	474	756	1260	492	368	872	379	724	552		
18	508	672	756	442	339	937	691	499	398		
25	425	665	581	432	308	814	1200	1150	412		
Apr. 1	402	605	599	448	347	578	743	1490	769		
8	525	579	586	414	438	409	503	736	558		
15	549	590	487	377	311	359	477	756	379		
22	439	464	539	846	255	275	762	620	950		
29	730	399	492	524	297	255	566	589	814		
May 6	536	353	371	318	224	258	411	520	652		
13	410	306	329	267	220	199	487	380	508		
20	411	329	311	236	172	475	402	397	570		
27	318	361	360	247	1/19	840	589	418	402		
June 3	314	589	354	227	166	361	388	408	298		
10	320	402	343	249	123	358	338	375	286		
17	258	294	261	301	150	395	355	280	254		
24	270 210	359 308	211 184	221	107	269	249	220	234		
July 1	210	239	184	203 296	132 586	238 212	450 622	169 178	185 189		
15	206	236	187	310	444	346	470	209	183		
22	217	435	142	596	574	201	311	220	180		
29	233	814	151	302	354	298	264	165	207		
Aug. 5	256	454	160	288	312	370	273	180	303		_
12	269	380	159	481	240	313	273	162	264		
19	317	267	375	3100	164	276	343	159	176		
26	360	201	244	557	149	318	180	112	163		
Sept. 2	505	185	214	2480	145	205	149	108	144		
9	619	249	151	724	119	433	135	104	179		
16	381	191	120	463	106	267	112	136	590		
23	258	143	116	359	98	209	218	155	685		
30	191	148	107	304	130	434	128	278	276		
Oct. 7	276	130	131	264	79	260	112	200	267		
14	211	116	98	238	76	211	107	136	197		
21	685	110	90	214	74	185	120	249	176		
28	599	112	87	187	102	204	130	192	370		
Nov. 4	406	130	94	256	210	194	132	136	216		
11	300	480	100	192	129	180	231	145	190		
18	299	185	99	228	93	163	135	140	306		
25	240	481	121	177	150	178	119	176	547		
Dec. 2	284 225	289	110	220	110	245	162	410	420		
16	214	218 210	95	189	320	588	123	262	481		
23	307	185	94 123	195 244	204 214	380	112	218	537		
31	438	290	178	528	357	313 1480	94 225	209 422	371 672		
Maximum	2260	814	1820	3100	586	1480	1450	1490	1000		
Minimum	191	110	87	96	74	163	94	104	140		and a
Taracantonia	-/-		01	, , , ,	14	100	74	104	140		,

Location (revised).- Water-stage recorder, lat. 35°37'22", long. 83°00'26", 500 yards downstream from ford, 0.7 mile upstream from mouth, and 2 miles downstream from Cove Creek and Cove Creek post office, Haywood County. Datum of gage is 2,383.89 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 65.3 square miles.

Records available. - May 1930 to December 1945.

Average discharge. - 15 years, 78.7 million gallons per day.

Extremes. - Maximum discharge, 2,070 million gallons per day Aug. 30, 1940 (gage height, 7.51 feet), from rating curve extended above 904 million gallons per day; minimum, 12 million gallons per day Jan. 2, 1940 (gage height, 0.54 foot), result of low temperature.

Remarks. - Slight diurnal fluctuation at low flow caused by small mill above station.

de total Million Communication				mean D	ıscnar	ge in i		1 Gallo	ons per	r day			
													Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean
1930						56.8	35.2	27.8	42.1	26.0	44.3	47.7	
1931	57.6	62.7	64.6	159	81.4	45.5	46.1	44.1	33.4	22.9	23.8	98.8	61.6
1932	127	164	107	111.	88.5	47.0	35.7	43.0	23.4	57.3	64.4	233	91.7
1933	158	204	123	93.7	124	59.5	47.7	50.8	59.4	30.6	29.2	31.5	84.6
1934	75.6	59.0	177	90.4	59.6	74.3	55.0	45.0	28.9	52.4	53.0	70.4	70.4
1935	105	102	142	152	98.2	53.9	53.0	54.1	31.8	27.1	59.8	42.6	76.9
1936	259	202	203	258	74.9	42.6	42.6	34.8	41.8	78.2	51.4	98.2	115
1937	297	163	105	112	85.3	58.5	51.2	75.6	60.7	71.1	53.0	60.9	99.5
1938	98.8	89.8	153	115	87.9	85.3	84.0	51.6	35.8	24.1	43.3	38.4	75.6
1939	86.6	25.3	164	108	63.7	45.9	40.5	32.8	19.7	18.0	19.2	23.8	71.7
1940	35.3	74.9	82.7	77.5		45.5	89.1	171	91.7	40.7	44.6	41.7	70.4
1941	54.7					27.3		49.7	25.4	22.0			47.0
1942	54.0	95.6	143	65.9		45.9	46.8		51.3	42.1	38.6	141	70.4
1943	156	203	156	110	83.3	65.9	87.9	63.2	34.6		32.8	31.1	87.2
1944	50.3	172	212	141	85.3	54.9	34.7	25.4	30.6		37.7	59.1	77.5
1945	87.2	138	114	105	96.9	49.0	44.6	47.7	68.5	47.9	66.5	104	80.7
Max.	297	204	212	258	1214	85.3	102	171	91.7	78.2	66.5		115
Min.	35 .3	25.3				27.3	34.7	25 .4	19.7	18.0	19.2	23.8	
Mean	113	120	135	118	78.7	53.6	56.0	54.7	42.4	38.7	43.1	72.6	78.7

Jonathan Creek near Cove Creek, N. C.

Maximum Discharge in Million Gallons per day

													Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Max.
1930						87	59	87	93	49	182	123	
1931	140	129	163	527	109	68	113	70	123	60	83	269	527
1932	501	278	395	256	276	64	90	118	68	207	145	975	975
1933	346	410	194	178	262	206	101	158	115	47	66	55	410
1934	364	339	711	147	85	180	124	63	57	247	152	176	711
1935	286	221	386	308	143	79	135	138	47	72	232	69	386
1936	1010	698	556	756	112	691	97	71	328	302	111	353	1010
1937	904	309	128	228	129	93	90	156	159	240	7.3	145	904
1938	193	124	425	200	198	136	262	79	45	29	165	807	425
1939	450	577	448	188	76	81	74	103	26	27	28	56	577
1940	231	147	171	152	76	74	199	995	231	54	116	80	995
1941	79	70	138	104	48	52	216	111	34	57	107	97	216
1942	134	319	255	92	172	62	106	113	226	70	61	618	618
1943	355	620	368	181	164	93	166	202	89	52	105	71	620
1944	214	504	536	246	152	80	53	42	185	99	155	171	536
1945	338	342	222	185	154	78	96	103	262	116	163	238	342
Max.	1010	698	711	756	276	691	262	995	328	302	232	975	1010
Min.	79	70	128	92	48	52	53	42	26	27	28	55	216
Mean	370	339	340	250	144	133	124	163	130	108	121	269	617

					bollar g			001101	10 1/01	aay			Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Min.
1930						39	26	19	17	23	24	34	·····
1931	40	36	47	94	58	29	26	31	23	19	20	32	19
1932	68	99	68	72	56	3 5	22	24	16	21	43	48	16
1933	101	112	98	74	72	37	34	34	32	26	25	25	25
1934	32	32	78	68	44	43	37	33	22	24	34	48	22
1935	65	65	89	103	70	41	33	30	22	22	23	28	22
1936	32	110	105	109	47	32	25	23	22	34	39	38	22
1937	165	115	81	71	59	41	38	42	37	35	42	30	30
1938	61	72	72	73	59	59	47	34	28	22	22	28	22
1939	37	133	97	78	52	3 2	27	25	17	15	17	17	15
1940	15	22	57	50	39	32	34	47	50	34	35	32	15
1941	39	33	3l _t	48	27	19	34	31	19	17	20	23	17
1942	32	50	65	49	40	32	29	36	30	35	32	63	29
1943	81	96	78	87	60	71/1	46	36	28	26	25	19	19
1944	35	31	99	98	59	37	25	21	17	21	22	34	17
1945	44	41	74	71	61	34	32	28	28	36	38	65	28
Max.	165	133	105	109	72	59	47	47	50	36	143	65	30
Min.	15	22	34	48	27	19	22	19	16	15	17	17	15
Mean	56.5	69.8	76.1	76.3	53.5	36.6	32.2	30.9	25.5	25.6	28.8	35.2	21.2

Jonathan Creek near Cove Creek, N. C.

Mean Weekly Discharge in Million Gallons per day

Mrc ol-		<u> </u>	Mean We	lecty D.	rscharge	TII MIT	TION UE	TIOHS F	er day		
Week Endin	g	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
Jan.	7		68	130	232	125	74	230	467	121	63
	14		64	138	161	97	121	265	194	79	64
	21		59 46	94	115	52	76	401	323	64	69
<u></u>	28		46	79	137	47	158	198	243	126	79
Feb.	4		39	254	129	41	79	207	193	107	278
	11 18		52 83	176 167	219 245	39 38	71	215 207	198 158	85 81	260 329
	25		68	146	213	52	90	177	141	99	168
Mar.	4		57	103	135	289	120	150	116	95	187
	11		57 55	89	110	213	121	130	107	180	251
	18		54	77	119	104	219	121	110	154	152
	25		59	113	152	116	121	203	105	165	110
Apr.	1		106	175	108	161	139	392	88	141	137
	8 15		245 146	146 99	93 7 9	99 98	177 147	444 313	96 105	138 130	132 108
	22		126	77	110	90	149	170	97	109	100
	29		132	98	92	7L	136	128	151	84	95 88
May	6		101	147	111	74 65	97	103	112	72	72 65
	13		90	88	190	56	105	88	89	67	65
	20		75	75	123	63	113	72	90	80	62
T	27	71.	72	68	92	51	93	56	70	108	63
June	3 10	74 67	52 47	57 48	71 56	63	71 62	47 52	66 71	131 92	60 55 43
	17	59	52	51	55	92 82	52	47	57	68	113
	24	53	43	48	56 55 65	78	49	36	50	83	38
July	1	41	34	37	67	61	43	33	48	74	38 37
	8	34	36	59 3 5	50	55 58	53 38	39	48	59	43
	15	38	30	35	49	58	38	35	45	71	43 45 38
	22 29	39 33	49 70	2 <u>7</u> 25	47 40	54 47	61 65	59 28	50 59	76 137	30
Aug.	5	23	45	48	53	46	37	48	57	73	37 33
3200	12	29	47	42	42	47	41	39	69	65	32
	19	26	36	56	42	47	60	34	78	47	32 43
	26 2	37	52 38	32 25	45	45 37	81 43	27 36	90	38 38	30 26
Sept.	2	20	38	25	74	37	43	36	79	38	26
	9 1 6	28 59	52 29	22 18	92	28	39 35	143	94	39	23
	23	50	26	17	70 41	30 26	26	36 25	64 45	41 30	19 19
	30	37	26	36	33	31	25	68	39	34	17
Oct.	7	26	21	49	3 5	64	23	68 45	49	27	21
	14	26	24	28	29	79	24	96	41	24	17
	21	23	21	91	32	41	25	125	85	23	17
Morr	28	24	20	<u>55</u>	28	32	29	61	101	23	17
Nov.	11	30 26	29 21	78 53	28 29	57 46	33 36	49	77	23 50	18 18
	18	79	20	53 45	26	36	36 109	54 65	56 52	26	17
	25	41	23	76	34	51	46	44	43	71_	23
Dec.	2	44	37	70	26	92	67	39	50	35	22
	9 16	50	96	51	33	78	47 50	96	41	33 34	19
	16	38	120	244	26	53	50	70	44	34	19 24
	23	37 61	103 93	183 473	34 34	53 65 67	39 32	79 1 57	62 96	30 55	24
Maxim		OT	245	473	245	289	219		467	180	
Minim			20	17	245	26	219	444	39	23	329 17
											

Jonathan Creek near Cove Creek, N. C.

Mean Weekly Discharge in Million Gallons per day (continued)

Week			MCarr we	ekly Di	Scharge	T11 MITT	TION Ga	110113 P	i day	!	
Endin	o o	1940	1941	1942	1943	1944	1945				
Jan.	7	19	59	67	156	79	161				
Juli.	14	54	41		96	43	76				
	21	51	52	57	161	47	69				
	28	23	67	50	182	37	58				
Feb.	4	23	49	39 57 50 57	213	37 34	48	.,			
	11	70	39	98	364	91	52				
	18	87	43	130	166	201	198				
	25	90	34	95	121	177	211				
Mar.	4	103	45	68	93	296	147				
	11	73	83	138	89	168	121				
	18	87	78	190	163	114	87				
	25	77	68	167	253	255	87			 	
Apr.	1	74	76	112	153	326	144				
	8	69	78 42	79	108	167	109		The same of the sa		
	15 22	61	63	73	104	151	77				
	29	96 86	52 65	57 51.	116 113	122 114	105 125				
May	6	63	46	54 52	83	99	114				
may	13	53	40	43	80	87	103				
	20	48	34	64	67	76	111				
	27	43	30	106	107	83	81				
June	` 3	38	29	59	71	77	61				
	10	46	26	55 48	70	66	59 48				
-	17	53	34	48	76	57	48				
	24	38	22	38	59	49	45				
July	1	47	26	36	67	38	39				
	8	80	86	34	116	37	41				
	15	85	103	67	107	37	38				
	22	127	133	40	66	37	39				
Ana	<u>29</u> 5	72 65	98 81	45 68	54 70	30 28	50 65				
Aug.	12	70	59	56	74	25	66				
	19	301	43	54	95	29	41				
	26	94	36	66	95 45	23	39				
Sept.		313	35	41	37	22	36				
	9	127	30	56	32	22	33		•		
	16	87	25	40	29	26	95				
	23	63 55	23	36	47	26	103				
	30	55	23	76	30	52	50				
Oct.	7	46	19	48	28	30	57				
	14	42	20	43	27	25	42				
	21 28	40	20	37 43	29	36	39				
Norr		36	27	43	34 33 47	27	56 45				
Nov.	4 11	59 41	30 25	30	1.7	24			1		
	18	41	21	39 34	30	27 28	40 54				
And Annual Property of the Control o	25	36	39	37	27	37	106				
Dec.	2	42	39 25	37 59	26	68	76				
	9	34	44	136	28	45	95				
	16	40	34	90	26	39	116				
The sales of the s	23	39	32	76	24 46	43	80				
	31	52	133	254 .		108	132				
	Maximum 313			254	364	326	211				
Minimum]		19	19	34	. 24	22	33				

Cataloochee Creek near Cataloochee, N. C.

Location (revised).- Water-stage recorder and concrete control, lat. 35°40'02", long. 83°04°23", at bridge on State Highway 284, 500 feet upstream from Little Cataloochee Creek and 2 miles north of Cataloochee, Haywood County. Datum of gage is 2.457.48 feet above mean sea level, datum of 1929.

Drainage area. 49.2 square miles.

Records available .- May 1934 to December 1945.

Average discharge. - 11 years, 64.7 million gallons per day.

Extremes. - Maximum discharge, 2,190 million gallons per day Aug. 30, 1940 (gage height, 7.01 feet), from rating curve extended above 969 million gallons per day; minimum, 5.8 million gallons per day Jan. 2, 1940, Dec. 17, 24, 1943 (gage height, 1.87 feet), result of low temperature.

Remarks .- Records excellent except those for periods of ice effect, which are fair.

Year	Jan.	Feb.	Mar.		May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Mean
1934					45.9	77.5	44.5	34.4	22.4	39.5	43.1	54.1	
1935	86.6	85.9	141	142	75.6	39.3	46.4	58.1	29.2	20.0	37.1	34.5	65.9
1936	234	156	172	197	44.4	28.7	27.4	26.0	29.2	63.8	39.3	74.3	91.1
1937	253	120	73.6	88.5	65.2	40.2	37.0	67.8	45.7	50.1	40.6	50.4	77.5
1938	85.3	74.9	143	99.5	83.3	81.4	91.1	58.1	34.2	19.8	34.6	34.0	69.8
1939	74.9	217	143	84.6	47.9	35.3	31.1	25.8	16.7	14.4	14.4	16.8	59.1
1940	22.9	47.8	85.9	74.9	45.4	55.8	74.3	144	64.6	27,7	28.2	29.9	58.5
1941	41.8	32.0		58.8	33.7	22.8	62.6	27.6	16.1	14.9	19.5	25.5	35.0
1942	45.2	82.0	108	48.2	56.8	40.1	40.2	53.4	39.0	32.6	32.1	124	58.5
1943	129	163	118	86.6	62.4	46.6	58.6	40.6	23.6	17.1	19.4	19.5	64.6
1944	29.5	145	175	112	58.3	32.3	20.9	19.7	23.4	24.9	31.1	56.7	60.4
1945	73.6	134	95.0	80.1	87.2	42.5	40.4	66.5	60.5	37.5	50.6	88.5	71,1
Max.	253	217	175	197	87.2	81.4	91.1	144	64.6	63.8	50.6		91.1
Min.	22.9	32.0	64.0	48.2	33.7	22.8	20.9	19.7	16.1	14.4	14.4	16.8	35.0
Mean	97.8	114	120	97.5	58.8	45.2	47.9	51.8	33.7	30.2	32.5	50.7	64.7

Cataloochee Creek near Cataloochee, N. C.

Maximum Discharge in Million Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Max.
1934					78	293	81	46	45	154	140	109	
1935	193	229	525	311	96	54	141	127	45	45	137	59	525
1936	1200	775	636	762	65	65	57	81	189	177	61	264	1200
1937	930	235	95	189	102	60	72	123	74 ·	129	59	140	930
1938	142	97	433	162	222	155	281	94	54	25	149	74	433
1939	388	485	511	132	81	50	68	54	21	21	19	47	511
1940	138	115	198	179	71	105	118	846	202	37	67	47	846
1941	74	49	118	86	49	36	156	45	23	48	101	51	156
1942	117	328	194	71	182	61	104	104	171	49	59	646	646
1943	311	587	255	135	110	65 '	124	93	65	28	64	68	587
1944	115	610	479	198	84	48	30	56	185	63	147	200	610
1945	260	473	169	126	204	65	80	193	189	79	102	163	473
Max.	1200	775	636	762	222	293	281	846	202	177	149	646	1200
Min.	74	49	95	71	49	36	30	45	21	21	19	47	156
Mean	352	362	328	214	112	88.1	109	155	105	71.2	92.1	156	629

Minimum Discharge in Million Gallons per day

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1934			01	~~~	34	43	29	26	17	19	28	36	
1935	57	46	84	85	52	28	28	29	18	17	17	26	17
1936	32	78	66	63	30	19	17	16	16	26	30	30	16
1937	110	78	67	60	43	28	27	38	28	26	30	22	22
1938	50	59	63	62	47	54	43	36	26	17	19	25	17
1939	34	111	68	57	39	26	23	21	14	12	12	12	12
1940	7.8	15	52	45	32	28	44	44	31	23	23	22	7.8
1941	31	26	25	42	23	17	19	19	13	12	13	15	12
1942	27	39	49	35	30	26	23	28	22	26	25	52	22
1943	61	65	55	68	48	32	30	25	18	15	15	10	10
1944	20	20	70	81	42	21	15	14	12	17	17	28	12
1945	39	35	61	54	48	30	28	34	27	30	28	56	27
Max.	110	111	84	85	52	54	44	44	31	30	30	56	27
Min.	7.8		25	35	23	17	15	14	12	12	12	10	7.8
Mean	42.6	52.0	60.0	59.3	39.0	29.3	27.2	27.5	20.2	20.0	21.4	27.8	15.9

Mean Weekly Discharge in Million Gallons per day

lave 1				mean w	еекту	שוscna:	50 211	1	011 (141)	LOTTO P	er day		7
Week		2021	2025	7026	7.025	3030	7020	7010	7017	7010	7010	2011	2017
Endi		1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Jan.	7		72	197	407	109	54	12	41	57	125	45	138
ľ	14		106	251	140	70	56	38	32	32	70	26	64
	21		62	403	286	54	61	30	34	49	129	27	56
1	28		115	147	222	100	70	15	56	43	163	23	64 56 50
Feb.	4		60	185	146	94	233	15	45	43	191	21	41
	11		52	178	152	68	229	43	33	72	322	58	39
	18		111	134	121	68	280	53	33	124	115	202	39 229
Ì	25		76	130	92	80	147	52	27	85	80	147	102
Moss					74	88	166			52	63		193
Mar.	4		127	102	14			102	34			247	127
-	11		120	88	75	184	257	76	69	106	59	130	114
ļ	18		258	74	73	147	121	99	72	146	123	82	71
	25		102	174	75	136	85	78	59	123	196	225	68
Apr.	l		110	395	72	133	93	61	70	85	124	269	106
	8		171	410	72	134	108	57	70	59	82	120	80
	15		138	219	85	105	89	52	58	54	79	118	60
1	22		141	105	76	84	75	101	46	41	92	106	81
	29		126	72	124	70	63	92	61	37	93	94	95
May	6		78	59	92	59	52	60	46	38	67	76	94
January 1	13		85	49	72	52	47	50	39	32	65	61	100
	20	47	85	49	63	61	1.0	44	32		52		100
	27		69	36		112	45			44		52	109
 		39			50		51	37	26	111	73	52	69
June	3	53	53	30	48	159	47	32	25	54	49	48	49 48
	10	101	45	34	47	99 65	40	38	23	52	49	41	48
	17	109	37	37	43	65	34	81	27	40	52	32	41
ļ	24	63	36	23	36	60	30	57	19	32	41	26	43
July	1	50	33	20	30	68	31	57	19	30	49	22	37
	8	46	47	33	34	54 68	30	60	52	28	71	23	41
	15	50	35	21	32	68	39	70	70	66	67	22	41 36
	22	43	40	30	37	85	28	95	95	37	39	19	32
	29	39	68	19	41	165	26	71	46	34	40	- 17	43
A 33 G	<u>-27</u> 5	38	36	32	49	82	28	67	40	41	67		42
Aug.	12	26										23	72
		36	41	30	57	69	23	54	29	56	41	17	118
	19	35	57	23	65	59	31	255	26	51	54	27	53
	26	34	96	19	81	43	26	82	24	69	31	16	47
Sept	. 2	27	50	31	78	40	23	255	21	40	26	15	38
	9	23	39	33	61	41	19	93	18	40	22	14	33
	16	22	32	23	50	38	16	58	17	30	19	15	69
	23	21	23	19	36	29	16	64	14	27	33	18	100
	30	24	19	44	30	28	15	35	14	58	20	48	47
Oct.	7	45	19	33	35	23	16	30	13	38	17	28	45
	14	57	18	82	30	19	14	28	14	31	15	21	36
	21	34	18	99	52	19	14	27	13	27	17	28	36 33
	28	26	21	52	73	19	14	25	19	35	19	25	30
Nov.	4	59	23	42	63	19	14	37	19	37	19	20	39 34
1100.		1.2											24
	11	43	26	44	45	35	14	28	15	33	27	20	30
	18	32	63	43	39	20	13	26	13	28	17	20	37
_	25	34	29	34	32	61	16	23	31	32	16	28	81
Dec.	2	57	40	31	36	30	16	28	17	51	15	66	64
	9	60	34	79	30	28	13	23	25	114	16	40	70
	16	42	42	59	34	28	13	32	23	71	15	34	112
	23	48	33	57	52	26	19	31	24	61	15	34	68
	31	54	29	109	87	52	21	34	33	239	31	114	108
Marri		74											
Maxim			258	410	407	184	280	255	95	239	322	269	229
Minin	num		18	19	30	19	13	12	13	27	15	14	30

North Toe River at Altapass, N. C.

Location. Water-stage recorder, lat. 35°53°59°, long. 82°01°50°, 0.1 miles upstream from Rose Creek and 1 mile northwest of Altapass, Mitchell County. Datum of gage is 2,542.91 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 104 square miles (111 square miles prior to October 1938).

Records available. October 1938 to December 1945. May 1934 to September 1938 at site 1.2 miles downstream, published as North Toe River above Spruce Pine.

Average discharge .- 11 years, 133 million gallons per day.

Extremes. Maximum discharge, 14,300 million gallons per day Aug. 13, 1940 (gage height, 19.5 feet, from floodmark in gage well), by slope-area method; minimum, 15 million gallons per day Dec. 14, 15, 1939, result of low temperature; minimum daily, 24 million gallons per day Oct. 16, 1941.

Maximum stage knowh, about 24 feet in July 1916.

Remarks .- Slight diurnal fluctuation at low flow caused by gristmills above station.

Mean Discharge in Million Gallons per day

	,									<u>~_</u>			Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean
1934					88.5	105	108	91.7	70.4	96.3	158	179	
1935	302	169	315	249	153	114	121	125	154	74.9	149	102	169
1936	358	249	302	341	140	82.0	72.4	73.0	88.5	197	96.3	140	178
1937	375	236	161	152	153	99.5	72.4	96.3	98.2	175	125	123	155
1938	138	181	217	129	120	116	251	125	67.8	44.9	115	80.7	132
1939	147	295	191	128	98.8	103	85.3	93.7	43.9	37.0	34.7	34.2	107
1940	40.9	96.9	123	183	89.1	85.3	83.3	556	145	69.8	75.6	89.1	137
1941	88.5	61.3	96.9	123	67.2	50.1	171	54.4	39.9	31.7	44.7	88.5	76.9
1942	74.3	135	211	92.4	257	227	105	112	158	89.1	74.9	185	143
1943	194	216	158	176	163	122	168	73.0	53 .3	40.1	51.2	52.8	122
1944		189	202	163	105	63.7	62.1	43.5	57.5	101	77.5		103
1945	133	167	154	188	215	118	82.7	65.9	216	134	114	154	145
Max.	375	295	315	341	257	227	251	556	216	197	158	185	178
Min.	40.9	61.3	96.9	92.4	67.2	50.1	62.1	43.5	39.9	31.7	34.7	34.2	76.9
Mean	176	181	194	175	137	107	115	126	99 .4	90.9	93.0	110	133

North Toe River at Altapass, N. C.

Maximum Discharge in Million Gallons per day

	ì			incum Di			1111011		115 por	aay			Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Max.
1934					165	229	218	196	289	320	879	762	
1935	1830	294	1150	457	243	253	231	274	594	361	943	170	1830
1936	1380	646	711	1060	224	156	133	145	595	982	155	513	1380
1937	1030	325	209	242	362	185	130	333	194	891	191	323	1030
1938	289	324	478	166	309	208	943	196	97	58	626	190	943
1939	569	617	333	176	203	290	322	866	74	88	56	50	866
1940	129	213	241	937	133	153	333	5390	455	163	194	396	5390
1941	129	94	159	244	123	116	450	127	104	78	116	276	450
1942	134	452	853	150	1060	594	180	282	477	134	124	1160	1160
1943	488	598	249	459	391	222	381	196	148	47	166	258	598
1944	226	665	549	278	201	101	142	86	572	523	214	207	665
1945	388	374	371	526	782	253	125	129	1230	448	205	297	1230
Max.	1830	665	1150	1060	1060	594	943	5390	1230	982	943	1160	5390
Min.	129	94	159	150	123	101	125	86	74	47	56	50	450
Mean	599	418	482	427	350	230	299	685	705	341	322	384	1413

Minimum Discharge in Million Gallons per day

			********	- mrcun 21	Scharge	, TII W	. 1 1 1 011	Gallor	10 001	uay			
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Min.
1934					66	64	65	57	45	56	71	109	
1935	143	130	130	176	120	7 7	64	72	70	54	66	79	54
1936	103	165	143	163	91	50	45	45	45	83	70	75	45
1937	227	168	121	111	101	67	47	52	54	52	90	84	47
1938	96	108	137	101	81	77	71	71	51	38	43	58	38
1939	76	172	116	96	79	56	48	40	34	29	29	26	26
1940	28	32	76	81	67	52	44	51	71	54	57	51	28
1941	63	45	55	78	42	32	70	35	27	24	29	29	24
1942	52	78	84	68	65	117	68	70	72	70	59	75	52
1943	101	121	103	114	105	78	91	43	36	35	36	29	29
1944	58	59	118	120	73	41	38	31	25	52	54	58	25
1945	65	58	101	98	127	79	63	48	45	85	79	100	45
Max.	227	172	143	176	127	117	91	72	72	85	90	109	54
Min.	28	32	55	68	42	32	38	31	25	24	29	26	24
Mean	92.0	103	108	110	84.8	65.8	59.5	51.2	47.9	52.7	56.9	64.4	37.5

North Toe River at Altapass, N. C.

Mean Weekly Discharge in Million Gallons per day

(397 - 1)			Mean	MEGVI	y D130.	narge	T11 1WL T	11011 (1	allow is	per da	~	Γ
Week	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Ending			-									
Jan. 7		195	362	548	140	159	32	112	86	206	112	221
14		603	360	266	111	127	49	85	57 76	120	63	132 106
21		233	532	409	103	103	54	78		190	101	
28		234	253	305	189	116	32	85	72	217	66	98
Feb. 4		152	242	290	149	330	33	69	86	248	64	74
11		141	244	258	141	317	83	58	146	351	109	89
18		225	307	220	236	354	107	73	169	180	258	204
25	-	158	213	233	197	211	120	50	134	155	238	255
Mar. 4		148	180	180	196	259	165	72	98	118	205	174
11		176	160	188	277	264	112	103	307	121	156	154
18		316	243	165	234	185	109	87	267	148	138	110
25		368	395	147	194	136	107	93	179	206	196	140
Apr. 1		504	477	125	150	135	120	116	146	183	349	204
8		284	611	160	140	145	125	95	104	126	160	166
15		228	366	144	132	127	115	112	103	146	176	110
, 22		247	226	125	132	111	315	91	79	247	163	267
29		227	192	173	114	127	191	133	79	193	145	216
May 6		162	159	171	100	104	116	88	99	131	124	161
13		146	168	137	86	91	96	89	72	179	121	143
20		156	149	193	105	87	76	61	477	152	96	373
27	89	171	111	145	134	113	79	50	402	196	92	215
June 3	96	120	91	109	206	152	84	45	186	132	85	140
10	131	156	89	125	122	138	74	43	210	134	78	123
17		107	107	92	96	86	112	75	380	120	68	109
24	119	99	70	97	99	70	81	39	179	102	53	132
July 1	85	88	56	77	109	61	65	50	137	144	44	98
8	1 -	120	94	84	101	92	61	235	107	183	56	83
15		94	68	66	116	112	69	201	103	245	75	83
22		128	70	58	371	68	138	190	79	135	84	91
29		154	52	71	443	76 56	65 68	98	132	123	42	73
Aug. 5	103	103	72	75	198			77	79 84	92 85	49	68
12	1	91	94	97	171	52	126	56	1		49	78
19		112	77 57	70	116 86	189	1560	54	123 169	90	714	63.
26		203		98			180	47		54	34	
Sept. 2	61	99	66	163	73	70	665	39	103	48	38	54
9		304	112	146	76	56	207	47	233	53	28	138
16		156	62	103	74	38	127	50	126	37 80	33	143
23	78	98 76	52	67	59 62	40	96 78	33	95	47	48 127	497
		65	140	57 96	50	36 52	72	30	183	39	80	130 172
Oct. 7			171	83	41		70	27	90		65	127
21		63	407	258	41	34 32	79	29	79	37 41	165	98
28		61	140	238	43	31	57	37	87	41	110	154
Nov. L		120	102	193	47	34	96	43	86	41	67	98
Nov. 1		71	107	121	194	32	71	60	78	83	58	85
18		335	108	137	66	30	79	33	68	45	60	100
25		114	85	99	144	43	63	48	73	45	72	159
Dec. 2		108	78	111	86	34	64	32	76	38	134	120
Dec. 2		90	128	94	72	32	57	124	135	43	87	178
16		123	122	105	76	32	66	73	112	40	78	144
23		98	121	103	64	35	67	61	96	32	75	109
32		98	196	187	107	38	164	109	391	95	142	194
Maximum		603	611	548	443	354	1560	235	477	351	349	497
Minimum		61	52	57	411	30	32	27	57	32	28	54
,		1				1	1 2-		1 1	<u> </u>	1 -0	

Nolichucky River at Poplar, N. C.

Location (revised).- Water-stage recorder, lat. 36°04'29", long. 82°20'41", at

Poplar, Mitchell County, 3.9 miles downstream from Cane River, and 6.1 miles
upstream from North Carolina-Tennessee State line. Datum of gage is 1,971.96
feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 608 square miles.

Records available. - July 1925 to December 1945.

Average discharge. - 20 years, 668 million gallons per day.

Extremes. Maximum discharge, 48,100 million gallons per day Aug. 13, 1940 (gage height, 19.7 feet), by slope-area method; minimum, 57 million gallons per day Sept. 7, 1925.

Floods of 1901 and 1916 reached a stage slightly over 21 feet, from floodmarks.

Remarks. - Some diurnal fluctuation caused by mills above station.

Mean Discharge in Million Gallons per day

-				Committee of the seasons		TOOM (50	MITITIOII	GGTTOIL	, por	<u>.</u>		
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Mean
1925	00118	100.	Mar .	1191	Trice.y	0,0110	173	96.3	90.4	188	381	274	
1926	614	756	678	711	410	240	382	423	282	238	730	1070	544
1927	625	1120	1080	911	622	833	478	379	271	336	601	1210	704
1928	756	613	756	1230	1360	891	644	1540	1300	1050	596	483	937
1929	698	1100	2160	891	1350	879	6 52	479	736	1420	1130	749	1020
1930	665	665	827	607	553	345	220	240	262	205	379	470	453
1931	562	364	443	1290	678	430	483	614	395	174	183	638	521
1932	1000	1270	866	782	904	353	242	264	194	743	808	1280	725
1933	995	1550	769	1030	1210	438	528	567	425	229	231	242	679
1934	335	467	1300	885	399	598	833	446	356	549	682	739	634
1935	1410	736	1980	1260	752	489	587	614	585	273	575	406	807
1936	1770	1310	1790	1910	606	362	353	414	515	1170	453	689	944
1937	1900	1140	736	745	651	384	315	495	506	8310	563	575	736
1938	718	936	1160	620	573	516	926	593	264	189	595	396	622
1939	688	1560	1010	661	445	381	371	410	200	180	171	189	516
1940	197	463	666	946	382	380	464	2800	759	346	371	514	693
1941	482	304	517	578	282	216	837	284	187	144	186	354	366
1942	297	612	1070	415	904	878	424	446	567	370	307	925	601
1943	1010	1090	897	880	745	512	735	340	233	183	250	246	590
1944	413	1050	1200	933	532	315	269	249	283	570	386	554	561
1945	738	1010	902	899	980	529	405	399	800	554	531	800	710
Max.	1900	1560	2160	1910	1360	891	926	2800	1300	8310	1130	1280	1020
Min.	197	304	443	415	282	216	173	96.3		144	171	189	366
Mean	794	906	1040	909	717	498	491	576	439	830	481	610	668

Nolichucky River at Poplar, N. C.

Maximum Discharge in Million Gallons per day

													Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Max.
1925							309	154	264	514	18110	401	
1926	3620	1400	1400	1970	1400	342	4820	827	459	377	5940	4130	5940
1927	1170	3160	2380	3570	2510	1570	1170	698	455	1650	4290	2790	4290
1928	1320	872	2130	2520	2930	2930	1230	16500	3970	3070	717	610	16500
1929	1320	5290	6100	1880	3370	1880	917	2610	4740	8590	1760	956	8590
1930	795	1230	1650	1040	917	510	358	685	646	326	1040	995	1650
1931	1650	510	833	3970	1230	756	995	1180	1430	285	290	1870	3970
1932	2520	3220	2120	1990	5120	514	659	1070	736	7040	1990	6520	7040
1933	2250	4450	1300	4160	3370	659	1200	1800	975	479	413	364	4450
1934	814	3930	4950	1990	788	2160	6520	917	1330	1740	2670	3590	6520
1935	10900	1870	8790	3120	1140	956	1470	1810	2380	1210	4470	788	10900
1936	10000	4170	4610	7300	879	782	622	1200	4410	7430	672	2130	10000
1937	6090	1980	956	1280	1360	627	620	2170	1550	3510	1100	2020	6090
1938	1810	2020	3130	782	1410	982	3460	1290	390	290	2580	988	3460
1939	2840	3230	2140	995	743	1100	788	2330	340	379	253	271	3230
1940	672	1370	1510	5230	591	769	1110	21400	2620	730	1050	2560	21400
1941	840	446	853	1250	451	479	3060	547	581	271	376	1340	3060
1942	617	2310	4010	652	2790	2070	1020	788	1720	628	437	6010	6010
1943	2650	3540	1700	2240	2060	1560	1250	1200	592	236	1050	782	3540
1944	975	3900	3420	1910	827	437	527	762	2650	2560	1340	1250	3900
1945	2260	2890	2890	2130	3110	827	698	820	5480	1740	1120	1760	5480
Max.	10900	5290	8790	7300	5120	2930	6520	21400	5480	8590	5940	6520	21400
Min.	617	446	833	652	451	342	309	154	264	236	253	271	1650
Mean	2760	2590	2840	2500	1850	1100	1560	2890	1800	2050	1690	2010	6800

Minimum Discharge in Million Gallons per day

				TI I I I I I I I I I I I I I I I I I I						ci day			Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct,	Nove	Dec .	Min,
1925							101	67	62	85	187	212	
1926	255	459	459	371	255	165	103	255	188	174	174	425	103
1927	336	659	588	520	365	425	326	245	198	171	236	326	171
1928	510	510	420	717	717	479	305	449	646	449	510	375	305
1929	449	510	995	685	872	575	479	275	265	420	795	610	265
1930	575	479	510	420	380	245	145	136	136	152	198	265	136
1931	284	227	326	575	479	224	240	260	182	141	143	161	141
1932	446	698	514	446	358	270	158	118	105	164	446	352	105
1933	659	814	622	585	549	245	240	270	188	1.74	188	188	174
1934	114	199	407	479	260	285	275	250	188	260	301	453	114
1935	607	479	600	782	571	324	290	265	240	199	219	280	199
1936	323	420	704	775	371	228	195	202	207	452	323	346	195
1937	1000	853	556	499	420	262	185	232	236	240	420	297	185
1938	459	527	627	452	367	329	304	286	189	164	178	271	164
1939	379	808	570	452	340	207	193	181	142	136	141	154	136
1940	103	155	388	420	276	240	5/10	290	347	284	289	248	103
11941	337	233	245	362	182	136	227	171	129	116	129	159	116
1942	155	258	327	280	271	407	253	303	248	293	244	331	155
1943	501	577	420	548	501	318	353	189	150	153	168	123	123
1944	262	257	636	659	370	196	165	159	116	238	242	355	116
1945	355	291	526	475	586	329	291	242	238	340	325	506	238
Max.	1000	853	995	782	672	575	479	449	646	452	795	610	305
Min.	103	155	245	280	182	136	101	67	62	85	129	123	103
Mean	405	471	522	525	424	294	241	231	210	229	279	307	162

Nolichucky River at Poplar, N. C.

Mean Weekly Discharge in Million Gallons per day

Bodding 1925 1926 1927 1928 1929 1930 1931 1932 1933 1931 1932 1936 1937 1931 1932 1933 1931 1932 1933 1931 1932 1933 1931 1932 1933 1931 1932 1933 1931 1932 1933 1931 1932 1933 1931 1932 1933 1931 1932 1933 1931 1932 1933 1931 1932 1933 1931 1932 1933 1931 1932 1933 1931 1931 1932 1933 1934 1932 1933 1934 1932 1933 1934 1932 1933 1934 1932 1933 1934 1932 1933 1934 1932 1933 1934 1932 1933 1934 1932 1933 1934 1932 1933 1934 1932 1934	Week					T CONC.E.	Ì	large		11011 4		PC1 d	<u> </u>	
1h			1925											1936
21		7								1				1910
28		14												1610
Feb. b 801 730 598 853 691 281 2010 1000 216 606 696 18 621 816 717 853 795 297 1590 1880 273 517 1350 188 561 975 606 769 596 111 1220 2000 232 1070 1770 255 891 1760 583 701 581 387 937 1360 280 685 1001 11 795 1670 678 2390 995 379 801 736 11120 990 826 18 565 1270 701 2820 808 361 607 721 530 530 1120 18 565 1270 701 2820 808 361 607 721 530 2020 1170 255 376 3160 3180 318 316 565 1270 701 2820 808 361 607 721 530 2020 1170 255 36														2270
11														956
18	Feb.													
25														
Mar.				561				596						
11								584		937				1030
18	Mar.													885
25								995			736			
Apr. 1 691 640 1050 1360 611 736 1370 672 1720 3160 3130 15 1120 898 1620 788 662 680 685 652 1410 3990 22 678 1140 885 820 607 891 570 230 1010 1110 1060 29 452 1090 1320 969 475 1090 642 872 659 1120 911 313 3148 516 1750 1280 583 866 811 2070 366 701 691 200 652 430 1140 1270 743 538 685 1010 360 801 691 277 320 401 1140 1390 5145 782 594 685 331 833 471 310 336 622 956 891 1020 371 521 388 717 537 572 383 17 229 721 866 769 337 525 365 488 430 4156 417 211 2														
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15	Apr.	T												
22											605	052		
29		72												
May 6 357 659 1030 1120 116 611 1800 1230 170 713 756 13 316 516 1750 1280 583 866 814 2070 366 704 695 695 695 695 1140 1270 713 538 685 1010 360 840 642 645 6		20												
13	Marr	<u>-7</u>												
20	May													608
27		20												61.2
June 3 36 1400 1330 1740 374 521 388 717 537 572 383 10 262 956 891 1020 375 396 366 482 627 625 383 17 229 724 866 769 337 525 365 488 430 456 471 24 238 911 576 691 339 430 368 318 911 446 298 14 195 485 1230 756 320 287 285 401 412 378 266 15 15 164 412 378 266 15 15 164 412 760 685 208 357 229 452 1540 382 313 216 22 119 607 525 607 219 415 192 439 943 634 368 31 891 246 29 486 29 486 284 525 565 591 225 717 183 605 512 911 246 486 29 486 284 525 565 591 225 717 183 605 512 911 246 486 29 486 284 525 565 591 225 717 183 605 512 911 246 486 29 384 489 399 3930 3820 277 704 178 788 549 421 441 441 441 441 441 441 441 441 441														1,71,
10	June													
17	ouro													389
24														
July 1														
8	July	ĺ												266
15	v	8												483
22		15									452			317
29		22		119	607		607	219		192				368
12			186	284	525	565		225	717	183	605	512	911	246
19	Aug.								537		711			326
26 73 516 275 1140 730 358 685 158 526 371 1190 245 Sept. 2 72 318 419 1070 312 170 457 122 445 288 428 318 9 68 306 308 2070 369 172 872 151 607 243 1120 596 16 127 342 296 969 363 254 269 121 545 386 626 310 23 83 216 238 1200 419 364 222 147 305 455 374 307 30 89 264 207 879 1920 291 202 379 223 368 282 930 Oct. 7 103 261 200 691 2160 198 178 368 220 665 241 769 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>359</td> <td></td> <td></td> <td>711</td>											359			711
Sept. 2 72 318 419 1070 312 170 457 122 445 288 428 318 9 68 306 308 2070 369 172 872 151 607 243 1120 596 16 127 342 296 969 363 254 269 121 545 386 626 310 23 83 216 238 1200 419 364 222 147 305 455 374 307 30 89 264 207 879 1920 291 202 379 223 368 282 930 Oct. 7 103 261 200 691 2160 198 178 368 220 665 241 769 14 112 245 614 543 652 212 170 264 178 846 229														414
9 68 306 308 2070 369 172 872 151 607 213 1120 596 16 127 3142 296 969 363 2514 269 121 5145 386 626 310 23 83 216 238 1200 119 3614 222 117 305 1455 3714 307 30 89 2614 207 879 1920 291 202 379 223 368 282 930 0ct. 7 103 261 200 691 2160 198 178 368 220 665 211 765 114 112 215 6114 513 652 212 170 2614 178 816 229 713 21 256 221 317 13140 503 196 152 1900 297 1455 220 2714 698 11 251 299 3014 626 995 253 160 1010 289 501 257 512 18 801 1150 1140 552 1340 641 1514 599 212 319 1310 518 25 219 724 665 585 1020 388 202 833 225 859 1360 392 16 232 982 1250 143 659 379 762 1110 229 512 527 610 23 275 698 1210 1497 795 313 808 956 255 5114 122 620 31 324 2120 9014 505 730 565 659 2690 251 556 336 913 102 1030 2180 2690 2070 2170 3160 3990 1030 218														
16	Sept.								457		445	1 .		
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30 89 264 207 879 1920 291 202 379 223 368 282 930														
Oct. 7 103 261 200 691 2160 198 178 368 220 665 241 769 14 112 245 614 543 652 212 170 264 178 846 229 743 21 256 221 317 1340 503 196 152 1900 297 455 220 2740 28 286 237 255 1720 2520 187 156 516 227 340 214 698 Nov. 4 205 204 277 717 1330 236 260 904 213 446 441 485 11 251 299 304 626 995 253 160 1010 289 501 257 512 18 801 1450 1140 552 1340 641 154 599 212 349 1310 518 25 249 724 665 585 1020 388 202 833 225 859 436 393 Dec. 2 278 698 429 561 866 323 175 480 204 1650 428 348 9 267 456 1710 466 769 645 455 382 240 853 359 678 16 232 982 1250 443 659 379 762 1140 229 512 527 610 23 275 698 1210 497 795 313 808 956 255 514 422 620 31 324 2120 904 505 730 565 659 2690 251 556 336 913 Maximum 2120 1760 3930 3820 1030 2180 2690 2070 2470 3160 3990														
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21 256 221 317 1340 503 196 152 1900 297 455 220 2740 28 286 237 255 1720 2520 187 156 516 227 340 214 698 Nov. 4 205 204 277 717 1330 236 260 904 213 446 441 485 11 251 299 304 626 995 253 160 1010 289 501 257 512 18 801 1450 1140 552 1340 641 154 599 212 349 1310 518 25 249 724 665 585 1020 388 202 833 225 859 436 393 Dec. 2 278 698 429 561 866 323 175 480 204 1650 428 348 9 267 456 1710 466 769 645 455 382 240 853 359 678 16 232 982 1250 443 659 379 762 1140 229 512 527 610 23 275 698 1210 497 795 313 808 956 255 514 422 620 31 324 2120 904 505 730 565 659 2690 251 556 336 913 Maximum 2120 1760 3930 3820 1030 2180 2690 2070 2470 3160 3990	000.									1				
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Nov. 4 205 204 277 717 1330 236 260 904 213 446 441 485 11 251 299 304 626 995 253 160 1010 289 501 257 512 18 801 1450 1140 552 1340 641 154 599 212 349 1310 518 25 249 724 665 585 1020 388 202 833 225 859 436 393 Dec. 2 278 698 429 561 866 323 175 480 204 1650 428 348 9 267 456 1710 466 769 645 455 382 240 853 359 678 16 232 982 1250 443 659 379 762 1140 229 512 527 610 23 275 698 1210 497 795 313 808 956 255 514 422 620 31 324 2120 904 505 730 565 659 2690 251 556 336 913 Maximum 2120 1760 3930 3820 1030 2180 2690 2070 2470 3160 3990													1	
11 251 299 304 626 995 253 160 1010 289 501 257 512 18 801 1450 1140 552 1340 641 154 599 212 349 1310 518 25 249 724 665 585 1020 388 202 833 225 859 436 393 Dec. 2 278 698 429 561 866 323 175 480 204 1650 428 348 9 267 456 1710 466 769 645 455 382 240 853 359 678 16 232 982 1250 443 659 379 762 1140 229 512 527 610 23 275 698 1210 497 795 313 808 956 255 514 422 620 31 324 2120 904 505 730 565 659 2690 251 556 336 913 Maximum 2120 1760 3930 3820 1030 2180 2690 2070 2470 3160 3990	Mov													
18 801 1450 1140 552 1340 641 154 599 212 349 1310 518 25 249 724 665 585 1020 388 202 833 225 859 436 393 Dec. 2 278 698 429 561 866 323 175 480 204 1650 428 348 9 267 456 1710 466 769 645 455 382 240 853 359 678 16 232 982 1250 443 659 379 762 1140 229 512 527 610 23 275 698 1210 497 795 313 808 956 255 514 422 620 31 324 2120 904 505 730 565 659 2690 251 556 336 913 Maximum 2120 1760 3930 3820 1030 2180 2690 2070 2470 3160 3990	14000													
25 249 724 665 585 1020 388 202 833 225 859 436 393 Dec. 2 278 698 429 561 866 323 175 480 204 1650 428 348 9 267 456 1710 466 769 645 455 382 240 853 359 678 16 232 982 1250 443 659 379 762 1140 229 512 527 610 23 275 698 1210 497 795 313 808 956 255 514 422 620 31 324 2120 904 505 730 565 659 2690 251 556 336 913 Maximum 2120 1760 3930 3820 1030 2180 2690 2070 2470 3160 3990														
Dec. 2 278 698 429 561 866 323 175 480 204 1650 428 348 9 267 456 1710 466 769 645 455 382 240 853 359 678 16 232 982 1250 443 659 379 762 1140 229 512 527 610 23 275 698 1210 497 795 313 808 956 255 514 422 620 31 324 2120 904 505 730 565 659 2690 251 556 336 913 Maximum 2120 1760 3930 3820 1030 2180 2690 2070 2470 3160 3990														393
9 267 456 1710 466 769 645 455 382 240 853 359 678 16 232 982 1250 443 659 379 762 1140 229 512 527 610 23 275 698 1210 497 795 313 808 956 255 514 422 620 31 324 2120 904 505 730 565 659 2690 251 556 336 913 Maximum 2120 1760 3930 3820 1030 2180 2690 2070 2470 3160 3990	Dec.													348
16 232 982 1250 443 659 379 762 1140 229 512 527 610 23 275 698 1210 497 795 313 808 956 255 514 422 620 31 324 2120 904 505 730 565 659 2690 251 556 336 913 Maximum 2120 1760 3930 3820 1030 2180 2690 2070 2470 3160 3990	0													678
23 275 698 1210 497 795 313 808 956 255 514 422 620 31 324 2120 904 505 730 565 659 2690 251 556 336 913 Maximum 2120 1760 3930 3820 1030 2180 2690 2070 2470 3160 3990													527	610
31 324 2120 904 505 730 565 659 2690 251 556 336 913 Maximum 2120 1760 3930 3820 1030 2180 2690 2070 2470 3160 3990														620
Maximum 2120 1760 3930 3820 1030 2180 2690 2070 2470 3160 3990											251			911
	Maxim	um			1760				2180		2070		3160	3990
WILLIAM 1174 500 1442 215 140 125 151 140 535 514 542	Minim	um		119	200	443	312	170	152	121	178	232	214	245

Mean Weekly Discharge in Million Gallons per day (continued)

Week					1					1	lay (co			
Endir	ng	1937	1938	1939	1940	1941	1942	1943	1944	1945				
Jan.	7	2910	756	638	148	698	342	101	532	1320				
	14	1270	558	561	229	433	187	587	336	691				
	21	2180	485	521	299	397	345	1050	525	576				
	28	1400	1030	579	136	436	293	1100	305	513				
Feb.	4	1450	788	1810	156	374	339	1300	287	358				
	ıi	1270	730	1750	339	300	782	1910	567	422				
	18	1030	1290	1930	504	337	782	891	1450	1340				
	25	1070	963	1010	685	255	542	698	1250	1650	}		ŀ	
Mar.	4	846	1050	1260	859	304	366	548	1320	963				
	11	859	1630	1520	620	577	1490	536	911	930				
	18	743	1180	950	704	564	1430	820	736	573				
	25	672	975	672	572	434	969	1410	1240	743		-		
Apr.	1	586	730	672	605	605	704	1030	2030	1340				
p	8	775	646	788	623	736	474	634	911	801				
	15	704	645	672	632	523	475	698	1100	536				
	15 22	615	643	564	1620	426	349	1250	911	1260	İ			
	29	866	559	606	988	652	326	969	788	1010				
May	6	782	452	516	521	384	472	639	611	795				
and y	13	578	384	422	409	363	309	904	618	749				
	20	808	476	386	337	257	1270	788	472	1640				
	27	581	749	470	334	205	1610	730	412	904				
June	3	466	924	563	295	187	749	543	491	605				
oune	10	475	539	514	298	182	866	510	376	556				
	17	343	405	337	492	327	1480			551				
	24	368	405	290	430	169	685	477	323 293	590				
July	1	326	484	238	329						 	 		
oury	8	354	358	404	346	200 782	450 410	730	215	406				
	15	306	441	450	388			943	244	393				
	22	244	1230	283	632	1120 1210	453 284	904	368	398 429				
	29	1313	1670	340	348	463	560	556	302	375				
Aug.	5	372	879	315	583	325	389	438		528	 			
nug.	12	453	924	247	840				338	400				
	19	359	577	704	7110	340 273	3 75 508	339 519	235	346				
	26	519	355	399	950	263	585	245	179	428				
Sept.		969	295	357	3840	203	382	214		280	 			
Dep v.	9	775	299	255	1100	216	665	228	204					
	16	500	294	170	636				157	382				
	23					255	475	157	163	457				İ
		297	238 223	197	459	142	342	340	243	1950				
Oct.	30 7	251	218	153	402	136	788	211	603	527				
0000	14	531		253	335	141	421	173	519	736				
	21	409	178 180	162	328	123	373	170	352	535				
	28	1110	185	157	417	132	355	187	911	406				
Nov.		879		153	300	156	355	189	598	600				
7404 °	1		181	165	502	195	360	208	314	402				
	11	533	1020	165	338	217	317	407	265	344				4
		665	343	154	373	146	285	220	282	440				
Dec	25	448	730	202	304	203	292	196	366	833				
Dec.	2 9	474	457	167	305	171	328	186	743	578				
		382	340	167	271	486	788	200	498	943		1		
	16	440	373	169	302	273	565	196	457	711				
	23 31	489	310	188	362	222	433	162	425	547				
Mozed		975	546	269	110	1,72	191	1119	795	10/10				
Maxim Minim		2910 244	1670 178	1930	7110	1210	1610	1910	2030	1950				
MITITIL	CUII	244	110	153	110	123	187	101	157	280	1			

South Toe River at Newdale, N. C.

Location. Water-stage recorder, lat. 35°54'30", long. 82°11'30", at bridge on U.S. Highway 19E at Newdale, Yancey County. $1\frac{1}{4}$ miles upstream from Little Crabtree Creek and $6\frac{1}{4}$ miles east of Burnsville. Datum of gage is 2,443.98 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 60.8 square miles.

Records available. - May 1934 to December 1945.

Average discharge. - 11 years, 107 million gallons per day.

Extremes. Maximum discharge, 19,000 million gallons per day Aug. 13, 1940 (gage height, 17.4 feet), from rating curve extended above 2,300 million gallons per day on basis of discharge measurement at gage height 16.9 feet and contracted-opening determination at gage height 17.4 feet; minimum, 5.0 million gallons per day Oct. 20-23, Nov. 30, 1943 (gage height, 1.13 feet); minimum daily, 7.8 million gallons per day June 21, 1941, Sept. 19, 1943.

Remarks. - Considerable diurnal fluctuation at medium and low flow caused by power plants above station.

Mean Discharge in Million Gallons per day

				,					-				Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean
1934					71.1	145	125	65.2	80.8	121	158	129	
1935	275	106	203	152	85.3	46.8	104	140	129	42.4	83.3	64.6	120
1936	288	172	192	236	66.5	42.8	30.9	75.6	77.5	337	78.2	124	143
1937	305	160	94.3	120	80.8	49.4	46.5	141	137	212	112	91.1	129
1938	103	101	141	82.7	94.3	84.0	99.5	83.3	36.4		135	57.9	86.6
1939	121	261	161	107	67.2	49.4	47.7	110	38.8		18.5	20.2	84.0
1940	24.7	64.5	137	258	69.8	83.3	73.6		152	48.3	59.4	129	152
1941	80.1	39.9	69.1	87.9	36.9	24.5		67.8	28.2	21.8	30.3	93.7	66.5
1942	62.7	127	194	81.4	132	125	66.5	74.9	109	61.1	43.5	176	105
1943	151	161	125	156	112	76.9	125	46.0	26.3	21.6	35.5	35.9	89.1
1944	65.2	131	198	136	83.3	45.9	55.2	57.6	70.4	101	64.6	74.3	89.8
1945	102	136	118	136	123	69.1	59.8	67.8	233	107	90.4	118	113
Max.	305	261	203	258	132	145	210	726	233	337	158	176	152
Min.	24.7	39.9	69.1	81.4	36.9	24.5	30.9	46.0	26.3	21.6	18.5		
Mean	143	133	148	141	85.2	70.2	87.0	138	93.2	93.3	75. 7	92.8	107

South Toe River at Newdale, N. C.

Maximum Discharge in Million Gallons per day

						_							Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		Nov.	Dec.	Max.
1934					220	510	384	112	488	504	898	437	
1935	2320	247	589	3 04	128	76	304	632	605	182	568	136	2320
1936	1360	646	436	924	92	89	78	331	1030	3970	132	596	3970
1937	917	284	115	315	122	84	152	1020	565	1320	297	306	1320
1938	258	156	398	137	492	233	322	170	67	32	1130	154	1130
1939	788	540	443	173	92	108	152	1160	68	55	31	30	1160
1940	84	170	452	1980	110	310	224	7620	622	98	247	1120	7620
1941	158	57	136	242	65	47	1120	165	48	60	99	457	1120
1942	147	730	769	144	439	490	301	120	565	157	69	1340	1340
1943	419	607	245	1020	359	266	261	82	63	36	222	241	1020
1944	165	422	581	249	141	68	121	214	891	524	258	160	891
1945	388	401	388	333	300	143	120	151	1530	339	256	258	1530
Max.	2320,	730	769	1980	492	510	1120	7620	1530	3970	1130	1340	7620
Min.	84	57	115	137	65	47	78	82	48	32	31	30	891
Mean	637	387	414	529	213	202	295	981	545	606	351	436	2129

Minimum Discharge in Million Gallons per day

					m DISCI	101 50 1	11 1/11 1	12011 0	3770113	per de	~5		
										· ·			Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug,	Sept,	Oct.	Nov.	Dec.	Min.
1934					39	93	70	41	26	47	53	78	
1935	102	74	76	98	63	24	29	26	47	30	35	47	24
1936	52	107	96	94	44	19	19	27	27	93	50	50	19
1937	171	110	72	67	57	33	23	45	55	53	76	55	23
1938	64	74	80	57	45	48	40	40	17	19	21	40	17
1939	57	127	80	70	53	30	23	32	19	15	14	15	14
1940	15	19	67	72	49	41	42	45	59	38	39	32	15
1941	46	28	28	52	23	7.8	35	41	10	14	11	19	7.8
1942	39	58	63	54	43	60	30	47	35	43	19	50	19
1943	81	81	62	79	72	43	69	23	7.8	8.4	15	14	7.8
1944	37	36	96	94	63	22	28	16	8.4	47	40	48	8.4
1945	50	45	76	79	78	45	44	40	39	59	56	72	39
Max.	171	127	96	98	78	93	70	47	59	93	76	78	39
Min.	15	19	28	52	23	7.8	19	16	7.8	8.4	11	14	7.8
Mean	64.9	69.0	72.4	74.2	52.4	38,8	37.7	35.3	29.2	38.9	35.7	43.3	17.6

South Toe River at Newdale, N. C.

Mean Weekly Discharge in Million Gallons per day

Week				wearr W		1	0		on Gar	г	er day		
week Endin	g	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Jan.	7		170	309	479	112	121	17	126	80	170	87	174
	-14		652	271	202	83	92	29	74	45	100	50	96
	21		166	443	332	67	82	37	68	67	160	88	83
	28		180	197	228	148	81	19	63	58	153	47	74
Feb.	4		102	193	229	103	335	19	52	67	172	40	57
	11		81	174	174	83	282	50	49	129	287	67	60
	18		153	191	133	107	306	71	45	191	132	169	168
Mon	25		91 89	136 120	165	122	162 254	72 187	32 41	115 74	103 78	152 178	223 137
Mar.	4		115	120	110 103	187	248	115	77	255	87	154	112
	18		262	159	95	151	141	120	74	279	119	123	81
	25		231	205	91	127	100	99	63	169	167	227	97
Apr.	1		276	320	78	98	110	141	76	134	158	330	174
1	8		176	440	153	94	128	160	137	96	92	149	125 87
	15		138	269	114	98	99	122	83	95	90	147	87
	22		154	146	92	79	85	582	62	67	290	112	165
	29		138	114	130	62	110	205	78	65	162	131	170
May	6	۲,	92	88	102	58	84	103	48	61	102	97	125
	13	54	86	76	80 81	48	67 59	77 59	47 34	47 217	143	89 70	112 166
	20 27	59 50	85 93	65 53	75	59 100	63	59	28	206	102	80	112
June	3	133	66	44	61	241	74	50	25	101	76	74	79
9 (41)	10	157	56	45	66	96	59	59	24	143	63	55	72
	17	109	47	55	48	65	47	135	31	209	63	46	78
	24	211	40	38	43	66	40	94	19	93	58	Ъι	72
July	1	108	35	31	37	59	33	56	25	63	141	34 45 72	56
	8	113	50	36	45 43 35	45 59 131	46	55 58	123	54	169	45	52 50 75
	15	174	43	30	43	59	48	58	331	48	151	72	50
	22	134	173	28	35	T2T	34	118	357	34	102	70	62
A == ==	29	87	164	25 45	43 80	158	61 48	59 63	95 75	128 83	85 63	39 98	59
Aug.	5 12	84 78	66 42	165	99	131	47	380	90	62	57	59	57
	19	68	114	74	63	70	239	1670	58	85	52	53	76
	26	54	344	39	123	48	96	172	63	85	34	34	86
Sept.	2	44	96	34	419	42	94	1110	44	92	26	29	51
1	9	38	96 268	49	195	51	51	227	34	142	23	30	141
	16	121	135	37	129	38	34	123	32	73	21	34	129
	23	109	74	49	78	28	37	85	25	47	37	58	583
0 :	30	67	53	189	61	30	25	67	20	155	24	174	129
Oct.	7	143	41	140	190	26	34	52	21	63	19	103	143
	14 21	213 92	39 34	209 950	107 355	22	22	47 54	19 19	76 63	22	67	99 68
	28	62	34	154	219	21	18	39	25	51	21	99	132
Nov.	4	98	60	96	136	21	21	90	32	48	25	58	71
	11	89	40	92	94	315	18	44	43	43	72	47	58
	18	61	186	89	164	64	16	67	22	39	28	45	58 69
	25	246	62	63	85	136	23	43	29	45	23	49	153
Dec.	2	307	65	54	95	70	17	45	24	54	19	129	92
	9	174	52	131	68	53	18	36	142	112	23	75	120
	16	94	90	96	65	54	17	50	63	77	22	63	114
	23	93	68	94	83	42	20	61 361	59	61	18 80	56 98	80
Maxim	31	94	53 652	184 950	143 479	79 315	25 335	1670	357	442 442	290	330	583
Minim			34	25	35	21	16	17	19	34	18	29	50
TATTITIII	CLIII)4	2)))	1 51	1 10	1 1		74	1		

Cane River near Sioux, N. C.

Location. Water-stage recorder, lat. 36°00'52", long. 82°19'40", on State Highway 26, 1½ miles east of Sioux, Yancey County, and 1.4 miles upstream from confluence with North Toe River. Datum of gage is 2,045.24 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area. - 157 square miles.

Records available. - May 1934 to December 1945.

Average discharge. - 11 years, 153 million gallons per day.

Extremes.- Maximum discharge, 17,600 million gallons per day Aug. 13, 1940 (gage height, 17.8 feet), by slope-area method; minimum, 12 million gallons per day Jan. 6, 1940 (gage height, 1.14 feet), result of low temperature; minimum daily, 18 million gallons per day Oct. 7, 1941.

Remarks - Considerable diurnal fluctuation and some regulation caused by small mills and a power plant above station.

Mean Discharge in Million Gallons per day

						280 22					<u> </u>		Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean
1934					142	134	249	120	76.9	115	141	151	
1935	246	161	508	305	188	109	119	120	93.0	49.4	118	75.6	
1936	489	337	458	461	130	77.5	77.5	91.7	119	241	89.1	161	227
1937	499	287	182	179	152	81.4	74.3	114	115	165	117	132	174
1938	181	223	324	154	136	109	199	109	56.2	44.3	134	83.3	146
1939	157	390	245	168	102	77.5	80.8	78.2	39.6	40.2	36.9	42.9	
19/10	51.9	117	179	203	84.6	85.3	123	704	151	70.4	85,9	117	165
1941	109	65.9	126	148	80.8	49.1	198	57.4	38.6	31.1	37.7	65.9	84.0
1942	64.4	144	276	101	154	167	78.8	87.9	109	74.3		227	129
1943	252	283	233	192	154	104	184	100	53.9	44.9	58.9	59.6	143
1944	95.0	287	299	236	124	75.6	51.0	56.6	78.8	150	98.8	140	140
1945	198	274	242	229	243	129.	89.1	128	176	115	130	204	179
Max.	489	390	508	461	243	167	249	704	176	241	141	227	227
Min.	51.9	65.9	126	101	80.8	49.1	51.0	56.6	38.6	31.1	36.9	42.9	
Mean	213	233	279	216	141	99.9	127	147	92.3	95.1	92.7	122	153

Cane River near Sioux, N. C.

Maximum Discharge in Million Gallons	per	per	da	av
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Year	Jan:	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Max.
1934					278	338	2170	283	155	358	475	530	
1935	1100	363	1740	704	335	176	227	394	360	191	853	110	1740
1936	2710	1290	1250	1900	178	143	133	213	1020	1870	127	565	2710
1937	1800	530	231	304	320	114	178	421	286	736	194	583	1800
1938	457	350	1120	191	282	197	782	206	81	71	698	178	1120
1939	943	898	665	261	142	174	231	485	107	123	60	79	943
1940	135	337	380	775	132	208	324	6590	618	145	238	646	6590
1941	187	107	219	300	133	103	698	87	98	65	59	191	698
1942	149	678	924	151	485	355	193	164	534	116	87	1240	1240
1943	898	1070	477	485	477	315	394	463	130	59	212	201	1070
1944	205	1090	866	533	198	138	104	174	1040	820	315	371	1090
1945	827	775	885	659	585	215	159	245	1030	373	293	444	1030
Max.	2710	1290	1740	1900	585	355	2170	6590	1040	1870	853	1240	6590
Min.	135	107	219	151	132	103	104	87	81	59	59	79	698
Mean	856	681	796	569	295	206	466	810	455	411	301	428	1821

Minimum Discharge in Million Gallons per day

			1		11001141	,		1 dalle	nio per	day			Yearly
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Min.
1934					67	64	81	61	52	57	74	99	
1935	128	101	142	187	137	67	73	52	29	29	36	45	29
1936	58	129	185	176	74	44	39	37	43	92	50	64	37
1937	242	209	140	122	103	48	37	45	45	44	84	65	37
1938	100	131	150	109	79	59	57	47	35	30	37	54	30
1939	85	185	129	100	71	40	36	31	21	20	23	24	20
1940	27	42	87	103	59	39	56	83	56	50	56	52	27
1941	72	39	57	95	40	28	53	25	20	18	22	25	18
1942	26	69	54	57	58	54	32	35	40	39	45	86	26
1943	107	134	92	130	87	61	98	40	29	33	29	28	28
1944	52	59	157	149	87	37	28	26	26	54	57	87	26
1945	67	61_	137	112	140	84	60_	71	_55	74	66	112	55
Max.	242	209	185	187	140	84	98	83	56	92	84	112	55
Min.	26	39	54	57	40	28	28	25	20	18	22	24	18
Mean	87.6	105	121	122	83.5	52.1	54.2	46.1	37.6	45.0	48.2	61.7	30.3

Cane River near Sioux, N. C.

Mean Weekly Discharge in Million Gallons per day

137 c = 1-		1	1	1	1	scharg				us ber	day	l	
Week Endin	ı ct	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
		1774											
Jan.	7		233	511 428	775	205	125	39	154	70	227	127	383
	14		409	885	324 630	141 114	114	67	96	43 85	127	85	184
	21 28		163 228	273	336	255	138	75 34	92	59	292 298	112	147
Ech				306	342	197	508	42	100	<u> 27</u> 74		69	132
Feb.	4		127 110	341	328	176	416		89		328 524	66 145	72 102
	18		228	422		279	410	74 124	63	165 198			
			149	266	259 276	247	241	171	76	129	227	414	376
Mon	25		178	231		286	278	196	49 72	83	99		461 262
Mar.	4 11		239	234	207 202	485	401	144	136	343	130 127	395	240
	18		557	284	183	316	229			409	225	233	148
				607		258	161	198	136		387	173	177
1	25		736 698	827	174 151	<u> 250</u> 195	160	160	154	279		298 505	
Apr.	1 8			1010		168		172 189		171	253		390
			340		179		206		174	113	156	215	204
	15		260	436	171	159	176	144	133	117	160	290	135
	22		324	247	152	153	141	275	107	87	252	242	328
Marr	29 6		286 180	204 167	220	139	146	211	180	80	205	193 152	250 203
May	13		178	145	167 136	109	127 102	116 92	111	101 74	139	122	
	20		210	135	194	93 103	90	78	103 74	160	196 172	152	205 391
			214					68		280			
June	27	169	141	106 84	134	197 198	100	63	59 50	155	134	101	217 146
June	ر 10				110			63			107	94	
		134	125	92	96	121	96	59	50	219	90	85	136
	17 24	94 181	99 107	95 60	73 76	92 86	66 67	126 87	66	254	93	76	143
July		114	92	55	72	97	53	78	38 1 ₄ 2	112 76	93	78 54	136
ouly	1 8	121	117	99	69	97 82		108	175		159		101
	15	490	94	59 59	63	96	74 115	112	249	73 87	207 241	56 62	93
	22	287	123	87	56	234	56	133	306	57 55	151	53	97 83
	29	146	155	61	92	395	76	102	117	22 101	127	38	83 75
Aug.	5	122	98	81	96	171	66	160	71	99	125	77	162
	12	138	74	137	100	159	56	310	59	92	94	49	156
	19	164	98	101	92	99	137	1790	58	85	171	53	105
	26	103	225	56	122	72	79	211	57	94	67	38	115
Sept.	2	70	81	79	198	61	52	879	1,5	71	59	54	81
1	9	66	168	126	185	61	55	212	47	101	59	33	120
	16	74	104	67	114	64	28	122	48	85	34	32	101
	23	86	63	72	72	56	43	86	30	69	72	49	412
	30	85	45	230	60	45	29	76	28	183	50	214	101
Oct.	7	144	41	172	92	54	62	67	30	83	42	116	147
	14	163	40	133	81	44	34	67	25	72	41	79	iii
	21	96	42	578	214	39	34	85	29	71	44	275	90
	28	76	45	141	249	42	30	61	36	72	47	158	121
Nov	4	110	75	98	182	42	35	118	41	78	52	79	92
	11	115	55	96	112	224	37	79	37	70	89	66	75
	18	85	263	100	138	68	3i	83	30	61	5í	69	104
	25	171	87	81	90	185	48	70	44	61	52	90	225
Dec.	2	276	95	70	97	97	36	68	37	76	148	198	138
	9	176	74	157	79	77	33	65	83	213	49	135	231
	16	107	94	144	91	74	36	70	57	145	45	110	170
	23	108	79	145	111	76	42	86	45	110	33	101	132
	31	134	57	218	247	106	59	244	83	441	105	201	293
Maxim			736	1010	775	485	508	1790	306	441	524	505	293 461
Minim	um		40	55	56	39	28	34	25	43	33	32	72

MISCELLANEOUS MEASUREMENTS IN FRENCH BROAD RIVER BASIN

Discharge M.G.P.D.	7°69 7°69	17.8	0° 59	33.5	73.0	2°99	33,5	97.5	172	133	749	750	397	543	1340	557	859	782	525	909	18.1	96,3	40,1		19.2	45,8	29.7	19.5	10.1	98°1	45.3	9,04	9,36	
Tributary to	Tennessee River do	đo	do	qo	op ,	do	Ç	do	qo	do	do	do	do	do	do	do	do	qo	do	do	N. Fork French Broad River	French Broad River	qo		qo	do	qo	do	op	do	op	Davidson River	වූ දි	
Location	Ford on road between Tucker and Shoals Creeks Bridge on Brevard-Webster road		200 yards above mouth of West Fork	do	Eastatoe Bridge	do	Old V.S.G.S. gaging station at bridge at Rosman	9 O f	r Carson Creek	do	Penrose	Fanning Bridge		Alexander	do	do	Wagon bridge at Alexander	Warshall	Below power plant at Redmond	붗 mile above Hot Springs	200 yards above mouth	Near month	do		Bridge 20 yards above ford	Foot bridge at ford on main road	Near mouth	Ford of Brevard-Jeptha road	Brevard road	Near mouth	ф	4 mile above mouth	do do	
Stream	N. Fork French Broad River do) }	do	qo	French Broad River	do ,	do	do	do	do	do	do	op	do	do	do	do	do	op	do	Tucker Creek	W Fork French Broad River	do	Middle Fork French Broad	River	S. Fork French Broad River	Fork French	Catheys Creek	King Creek	Davidson River	do	Avery Creek	0 0	
Date	Sept. 16, 1900 Sept. 16, 1900 Sept. 30, 1995	2	Sept. 14, 1900	ر ار	114	oct. 15, 1900		Sept. 18, 192),		oct. 15, 1900	Sept. 17, 1900	Sept. 18, 1900	17, 1	Sept. 12, 1900	. 6.	t., 23	, 19	ν,	Ľ,	7, 1	Sept. 16, 1900	11, 1000	7,4	17,	4	Sept. 14, 1900	15, 1	13,	17,	17,	-4	1,6,1	July 19, 1904	1

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	M.G.P.D.	4,39	10.07	14.9	11°6	4,52	109	,381	. 665	82 ر	118	7,77	32,3	ر 90	55,6	7° 66	1,66	1,51	٠	42.8	18,5	53.1	58°2	137	2°09	91/-9		1,68	,	1.16	16.7	2°69	r	To ((6.32	C	38°8 12°3	
	irbucary to	Davidson River	do	do	do	do	do	op	do	0	French Broad River	op	do	C	O	do	do	do		qo	do	qo	do	do	do	Ç		Mills River	,	do	French Broad River	qo	,	Mud Creek	do	t	French broad River do	
Tootten	noca of oil		op	do	do	do	op .	mile above mouth, near Pisgah Forest	Pises	7 7	above mouth at Calhoun	do	At Calhoun		op	do	do	do	Highway bridge half a mile above mouth at	Calhoun	Near mouth	Near Mills River at site of gaging station		Bridge on old Haywood road	op	Outlet to the Pink Beds, in Pisgah National		Hendersonville waterworks intake		op	Highway bridge half a mile above mouth near Hillgrit	T.	ke, $2rac{1}{2}$ miles southeast of	t	Hendersonville		Bridge on Westfall's place 25 feet below county hwy, bridge, at Fairview	
C+room		Avery Creek	do	do	qo	do	qo	Joel's Branch	Coontree Creek	Stopped S Creek	Little River	do	do	do	do	do	do	do	do		Boylston Creek	Mills River	ф	do	do	S. Fork Mills River	Rt. Branch of N. Fork	s River	Lt. Branch of N. Fork		Mud Creek	do	King Creek		ao		Cane Creek) Cane Creek	
Da+o	5000	٦,	ີ. ສົ		23,		June 15, 1906	رَــاْ		`	17,	16, 1	19,	17,	, w	Ľ,			`% `%			Aug. 21, 1923	21, 1	, 17,	. 7		July 21, 1926	`	July 21, 1926	1	Aug. 25, 1925	18,		(Dec. 12, 1940	Sept. 18, 1900	July 25, 1935	

Miscellaneous Measurements in French Broad River Basin (Continued)

Discharge M.G.P.D.	1	20°2	7.30	1,16	1,10	526	51 °6	15.5	8,98	14.9	6°92	8,72	49.3	92 °7	24.5	9° †79	399	34°8	3130	65°5	14.7	13.8	,452	°517	£46°	2 0 7 7	رره ۲ وی ر	75 T	13.0	6,08		1,10	20°3	3,16	5,81	3.44
Tributary to	French Broad River do	op	qo	do	do	do	đo	qo	do	qo	do	do	do	do	qo	ф	ф	qo	do	do	Swannanoa River	qo	фo	French Broad River	do	do ,	do J	0	0,00	g 0		ф	do	do	op ,	do
Location	80 feet below bridge on State hwy, 69, Fletcher Bridge on State highway 29, Fletcher		Bridge on road from Mills River to Asheville	Skyland	road at	Near West Asheville, hwy. 191	Asheville	Asheville	Wouth near Asheville	ing station	low former gaging station at	000 feet below former gagir	At site of gaging station at Biltmore	do	qo	do	do	do	do	do	Two miles below Bl	Three mile	th, Biltmore	Beaver	Fifty yards above mouth	do	Ulivette	אל+ייסיי סדיסאלפי סר יישי פאל דייויס ביסיאלודו	•	At month	Concrete bridge State highway route 29, 4 mile	above dam near Weaverville	Highway bridge on old Asheville-Weaverville hwy.		do	qo
Stream	Cane Creek do	do	Avery Creek	Powell Creek	Bent Creek	Hominy Creek	do	qo		Swannanoa River	qo	op .	op	do	qo	do	do	фo	do	op	Flat Creek	N. Fork Swannanoa River	Chuns Branch Creek	Beaverdam Creek	op	qo	Lees Creek			O CO	Reems Creek		do	qo	op	Flat Creek
Date	July 25, 1935 Aug. 25, 1925	31, 1	Sept. 18, 1900	May 30, 1925	July 29, 1925	Aug. 31, 1940	Sept. 19, 1900	Oct. 17, 1900	29		13,	Nov. 12, 1931	5. 19,			16,	16,		Aug. 16, 1928	2, 19	20,	Sept. 20, 1900	Nov. 9, 1922	Aug. 25, 1925	Sept. 12, 1900	Oct. 30, 1900	Sept. 16, 1900	Scr + 1600	00+ 30 1000	Sent. 12, 1900	Aug. 31, 1925			12,	30, 1	Sept. 11, 1900

Discharge M.G.P.D.	3.23	37,7	29.1	22.7	10.5	2.78	30°7	56.9	2710		3230	2,15	3°88	,226	.879	1.45	3.13	2.87	31.,7	35°5	69°6	10.3	r (TOOT	8.59	70.42	12.9	11.8	26.1	1,49	28°6	134	38,5	59.6	50°3°	00.40
Tributary to	French Broad River	2 0	g p	Sandymush Creek	do	French Broad River	do	qo	Ivv River		do	French Broad River	do	do	do	qo	do	do	do	do	do	do	ŕ	qo	op	do	do	qo	do	op	do	do	do	op	do	200
Location	At mouth Bailev	qo	do	Blackwell Springs		of Ivy on State highway	One-eight mile below mouth of bull Creek	do 1 $rac{1}{2}$ mile upstream from Petersburg and $3rac{1}{2}$ miles		$rac{1}{2}$ mile upstream from Petersburg and $3rac{1}{2}$ miles	west of Mars Hill	100 yards above mouth		l mile above mouth		qo	100 yards above mouth		200 yards above mouth		At Hot Springs	qo	1,000 feet above U. S. highway 70 bridge at	Hot Springs	op	φο	qo	qo	do	op	đo	qo	do	do	O (7	ON
Stream	Flat Creek Sandymush Creek		qo	Turkey Creek		Ivy River	ao '	do W. Fork Bull Creek		Bull Creek		Little Pine Creek	qo	Pawpaw Creek	Walnut Creek	qo	Big Pine Creek	do	Big Laurel Creek		Spring Creek	do	ф ,		op .	qo	do	qo	do	op	фo	đo	do	qo	do	D D
Date	Oct. 29, 1900 Sept. 12, 1900	17,	oct. 30, 1900	Sept. 16, 1900	30°	1, 7, 1) T (June 17, 1944		June 17, 1944			31,	α,	10,	1,		31,	8, 1	18,	~~	Ę,	Oct. 9, 1944		ŢŢ.	Ť.	4,	Nov. 7, 1944			$\overline{}$	Feb. 23, 1945	16,	15,	α	onue 20 1745

Discharge M.G.P.D.	.627	.291	6.97	7,11	211	107	5,36	5.42	8,46	8,91	9.37	16.7	65.2	81,4		31.7	2,80	,	6.65	14.7	32.9	3.09	1°69	11.8	2,30	1,36	7°08	אר	11.6	51,0	26.6	209	67.8	7°05	368	156 216	
Tributary to	French Broad River	op	op	ф	op		Pigeon River	do	do	op	op	do	do	do		qo	Richland Creek		do	qo	do			Richland Creek	do	do	Pigeon River	(7	French Broad River	do	Op Op	3 0	do	qo	op	do	
Location	At Hot Springs do		½ mile above Sunburst		At Clyde		🚖 mile above mouth of Crawford Creek nr., Cruso		Below mouth of Hungry Creek near Cruso	Just below Hyett Creek, upstream from Hazelwood	qo	Hazelwood	do	Waynesville	Between county road bridge and railroad bridge about	stream from Lake Junaluska		E		½ mile upstream from bridge on U. S. highway 19		do	ф	do	ορ	Mouth near Waynesville	mouth of creek near Hepco	Just below mouth of Little Cataloochee Creek	11ear og varocinee 1t ford of Linville-Cranberry road		Above Beaver Greek at Sumice Pine	Pine T	2	do	do	Green Mountain Near Huntdale	
Stream	Bubbling Springs do	Shutin Creek	W. Fork		Pigeon R	do	E. Fork			Richland Creek	qo	do	do	do	qo		Hyett Creek	Allen Creek		op	do	Browning Branch	Camp Branch	Plott Branch	Eagle Nest Branch	Racoon Creek		Cataloochee Creek	N Too River	0	2 6	2 6	g op	do	do	do do	
Date	Oct. 15, 1939 Oct. 15, 1939	٦,	22,		16,	Apr. 20, 1922	22,	22,	. 22	Ţ,	15,			, 28,	Oct. 15, 1940							28,	Apr. 28, 1939		, 28,		, 24	Nov. 23, 1931	A119 27 1900	273	ر د د		26,	21,	25,	Nov. 10, 1920	277

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Discharge M.G.P.D.	194	6.27	2,17	5,83	26.2	7.24	10,01	5,23	3,10	1,70	2,31	2,13	1,99	3.93	5.91	3.02	2.41	1.29	9.82	9.43	20°9	2,82	591.	6.03	16.8	65.2	7,88	143	51.6	55.7	183	40.5	10.9	6.13	1,00	74.4	18.5	2°44	1/0/
Tributary to	French Broad River	North Toe River	qo	ор	do	ор	фo	ф	do	do	qo	do	op	do	do	do	qo	qo	qo	do	qo	Crabtree Creek	qo	North Toe River	do	op	do	do	do	do	do	do	do	South Toe River	do	do	đo	Q O	
Location	Near Huntdale	At mouth	op	qo		4 mile above mouth	At mouth	Plumtree		Near old post-office at Elsie		Near Spruce Pine	qo	Spruce Pine	op	Flatrock	op		· Ford of Burnsville-Spruce Pine road	- 1	e on State highway 69, near Spr	ford of Burnsville	qo	Jamprock Creek, near Busick	l mile above mouth of Three Fork Creek		e Colbert Creek, 4 mile	Ford of Micaville - Spruce Pine road	qo	op		Bridge on State highway 69 near Micaville	do	1 mile above mouth	- 1	Ford of Micaville - Marion road	do	ф ФО	
Stream	North Toe River	Kentucky Fork	Whiteoak Creek	Horse Creek	do	Squirrel Creek	Roaring Creek	Plumtree Creek	Hensons Creek	Threemile Creek	do	Beaver Creek	op	Grassy Creek		Bear Creek	do	Snow Creek	Crabtree Creek	do		Brush Creek		South Toe River	do	op	qo	do	do	qo	qo	do	op .	Three Fork Creek	Neals Creek	Rock Creek		Middle Creek do	
Date	17,	27,	200	ζα,	240	27,	6)7	27,	27,	26.	21,	26,	21,	26,	20,	26,	20,	25,	25,	20,	14,	25,	20,]	18	31,	Oct. 26, 1900	May 16, 1936	July 1, 1900	25	Aug. 30, 1900	27,	᠕	14,	31, 1	18,	31, 1	26, 19	Aug. 31, 1 70 Oct. 26, 1900	

Discharge M.G.P.D.	1,62	7,08	2,47	5,14	2,84	12.9	11,3	14°0	1.93	5,55	3.19	60°9	7,41	13.6	200)	6.41	1,07	,814	5,63	4.41	. 33 . 1	15°8	9.30	00°7	TT O	8,98	3°04	7°04	0,00	3/0/	2,0%	2000	L° (3	ي ن د	2,623	2,60	250°	1100
Tributary to	South Toe River	do	qo	do	do	op	ф		Little Crabtree Cr.	ф	op		North Toe River	do	ďo	qo	qo	ф	do	do	do	do	do,	do,	do	do	do ,	do	ďo,		Cane Kiver	ďo	do	do ,	do		Fine Swamp Branch	- 1
Location	Ford of Micaville - Marion Road	qo	At mouth	qo	do	qo	Just above lower ford of Micaville - Spruce Pine road	do	Ford of Micaville - Marion road	do	qo	qo	Bakersville	- ((mile above mouth	ф	At mouth	do	do	do	Ford of Huntdale - Bakersville road	do	At mouth		Near Big Tom Wilsons	go	Bridge on State highway 69, near Burnsville	Huntdale	go		Near Big Tom Wilsons		Near Burnsville	do	do	op	At Burnsville	Near Burnsville
Stream	Colbert Creek	do .	Locust Creek	op ~	Whiteoak Creek	op	Little Crabtree Cr.	do	Cane Branch	do	Brown Creek	do	Cane Creek	do	go	do	Pigeon Creek	do	Jack Creek	do	Big Rock Creek	фo	Pigeon Roost Creek		Cane River	do	do	do	do		Elk Fork Creek		Cattail Branch	ф	Bowlems Creek	qo	McIntosh Branch	Price Creek
Date	30,	26,	30,	26,	30°	26,	30°	27,	30°	26,	30°	26,	,21,	22,	Aug. 24,	S oct. 19, 1900	Sept. 3,	6		oct. 19, 1900	24,	19,	2μ ,	19,	1,		14,	24,	ຕິ	[7	رر	ر 18	ررْ	18,	Sept. 1, 1900	18,	12,	Sept. 2, 1900

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Miscellaneous Measurements in French Broad River Basin (Continued)

I O E L	Date Stream Oct. 18, 1900 Price Creek Sept. 2, 1900 Bald Creek Oct. 18, 1900 Elk Shoal Creek Sept. 2, 1900 Elk Shoal Creek Sept. 2, 1900 Bald Mountain Creek Oct. 17, 1900 Little Bald Mountain Creek do Sept. 2, 1900 Big Creek Oct. 17, 1900 Big Creek Oct. 17, 1900 Hollow Poplar Creek Aug. 23, 1900 Hollow Poplar Creek	Location Tributary to Discharge M.G.P.D.	Hinton Creek do Cane River	do	op op	do	op	do 1.69	go	op	Nolichuck	
	k Creek ain Creek d Mountain	Location			outh Je above month			qo	do	đo	of Erwin - Bakersville road	

QUALITY OF WATER

The importance of water is not always realized, particularly when it is of good quality and is available in adequate quantity. Water of good quality and in adequate supply is essential for industry, agriculture, public and domestic purposes, and to all forms of life. The individual and specific requirements for water for numerous uses are many-fold. Data on the chemical quality of water are of value in providing needed technical information for specific purposes. This is of particular importance since unsuitable water may cause losses due to corrosion, deterioration of equipment, scaling of equipment, loss of flow, boiler failure, loss of heat transfer, silting of reservoirs, staining and discoloration of material, wasting of soap, poor quality of processed foods, beverages, textiles, ice, bleaching, dying and tanning, loss of crops and good soil, deterioration of recreation facilities and property values, and destruction of fish and shellfish.

The French Broad River Basin has ample rainfall and in general relatively insoluable surface soils and rocks. Most of the surface waters are soft and low in mineral content and are attractive to industries for many purposes. However, as industrial development and population increase, the quality of streams may become poorer since the streams are the receivers of the waste materials. The prosperity of a state is advanced through its water facilities and then checked if adequate planning is not maintained through the study of chemical quality of water to assure its most advantageous use through ever-changing industrial development, growth, modern conveniences, and manner of waste disposal.

For years the Water Resources and Engineering Division has realized the need of data on the chemical character of water for planned coordination in the most advantageous use of water for industry, public supply, agriculture, recreation and in the conservation of fish and wildlife. The study of the chemical character of water in the French Broad River Basin was started in 1925. Several analyses of spot samples were made with other agencies cooperating with the Water Resources and Engineering Division, but these were scattered over the whole basin and for a period of several years. Among these cooperating agencies were the U.S. Geological Survey, the State Board of Health and Dr. E. E. Randolph of N. C. State College. In 1943 this Division made an agreement with the U.S. Geological Survey whereby a laboratory was set up on a permanent basis and a more concentrated study could be made. No daily sampling stations have been established up to 1945 1.

In 1944 and 1945 the Tennessee Valley Authority ran a series of monthly analyses on several streams in this section. All of these analyses are listed in this publication. The only change made in these was the conversion of alkalinity as calcium carbonate to bicarbonate. This conversion was made in order that the analyses would correspond to the analyses of other agencies found in the publication. A large number of these analyses show no iron. However, the data for iron was only reported to one decimal place. Generally, all streams in North Carolina contain small amounts of iron which would be indicated if the data were reported to two decimal places. Very few streams in North Carolina do not have minute quantities of iron in solution.

Daily sampling stations have been operated at Rosman and Hot Springs 1945-1946.

MISCELLANEOUS ANALYSES IN FRENCH BROAD RIVER BASIN Parts per million

				-								ľ	ŀ	-		-			T
Source and Location	Date of	Sus-	Color	es	Iron Ce	I m	Magnesium	Sodium	Potas-	Carbo-	Bicar-	Sul-	Ch10-	Fluo-	N5- T	Total I	To tal	Authority	
	Collection	pended Matter		S10 ₂	94	<u>.</u>	3		M M	co ₃	HCO3	phate SO4	5 G			70 0	ard-		
Beetree Creek near Swannanoa	4-14-45	1	4	7.9	-	1.3	9.0	2.]	1	0	7.0	3.1	6.0	0.	1.	02	9	J. S. G. S.	1
Big Laurel Creek near Stackhouse	5- 9-45	88	œ •	ດ (-	2.7	0.6	8.0 0.0	0 1	00	9:	5.5	9.0	٦,	9.	28	٠, ٥	op ,	
Boylston Creek near Horseshoe	3- 8-45	02	4 (0.0	_	#). i.			-	3 :		? .	-! -	4	22		g ,	_
Bubbling Springs nr. Hot Springs	12- 4-43 2- 6-25	. 5	2 2	1 52	3 5	9 %	5 -	2.0	0.6	> 0	13	0 . I	6 0	: ;	, o	101		9 6	
Cane Creek near Fletcher	6-20-27	16	\dagger	8.2	+	3.8	1.0	1		1.0	1	2.0	2.1	1	t	33	4	dalobas	Т
Cane Creek near Fletcher	429	21	۵	19		6.0				0	20	8.9	4	-		61	80	d. of Bealth	_
Cane Creek near Fletcher	12- 4-43	ŀ	ω	12	.03	2.9	1.2	3.1		0	19	1.7	1.0	۲.		33	- 2	J. S. G. S.	-
Cane Creek near Fletcher	8- 9-45	35	o,	13	_	6.0	1.4	3.8	æ	0	24	2.1	1.2	٦:	ε.	38	9	op	
Cane Creek near Stoux	9-27-45	9	4	10		2.6	1.1	3.5	3	0	17	2.3	6.	•	80.		_	qo	_
Catalocohee Creek nr. Catalocohee	4- 2-45	17	20	6.0	.01	1.2	4.	1.	9	0	7.0	1.2	9.	0.	2.	19	٩	qo	
Catheys Creek	1-21-28	9		4.5	_	2.2	1.0	2.3	9.	0	တိ	3.5	 	1	. 15		_	andolph	_
Catheys Creek near Brevatd	3- 8-45	7	_	2.4		9	₹.	2.7	~	0	2.0	 ויין	ď	_ _:	۲.			J. S. G. S.	
Clear Creek near Hendersonville	9-26-45	28		13		5.0	.7	3.	_	0	13	1.7	1.4	0	4.			ရ	-
Crab Creek near Penrose	3- 9-45	7	-	8.4	4	ω.	4.		6	0	9.0	0.1	6.	7	.1	1	_	qo	- 1
Davidson River above Pisgah Forest	1-21-25	3.4	o,	9.1	_	1.2	1.0	1.4	ο.	0	7.3	5.6	9.	<u> </u>	o			op .	
	9-30-55	1	15	6.8	_	1.5	٠.	6.	٠,	0	9.9	1.5	₹.	:	.10			ф	
Ca Davidson River near Brevard	3- 9-45	0	7	6.0		6.	4.			0	0.	1.4	ı.	٦.	۳.			op '	
Davidson River	1-21-28	2.0	7.0	9.7		1.4	φ,	1.5	S.	0	 	2.2	1.4	!	٦.			dalobas	
	2- 6-25	7.0	7	8.0	4	1.3	1.2	- 1	- 1	0	6.8	4:1	æ	:	.15	1	\dashv	J. S. G. S.	_
	12- 6-43	1	ឧ	9.7		1.9	1.0	2.0	9	0	13	2.0	1:1	0				qo	
	11-30-43	1	21	9.6		3.7	2,3	17.0	0	0	12	37	 	0.	 -:		_	op ·	_
French Broad River at Asheville	8- 9-45	46	82			4.4	1.3	19		0	34	17	6.2	0.	ω.		_	op .	
French Broad River at Bent Creek	8- 9-45	34	52	6.4		3.4	o, 1	8.6	0	0	54	3.7	2.5	0	4.		_	မွ .	
French Broad River at Blantyre	3- 9-45	17	38	7.1	4	5.6	٠.	7.1	9	0	21	3.6	6.2	•	.1		\dashv	op]
French Broad River at Calvert		_	o ;	8.9	_	0.1				0	0.6	1.2	φ.	- -:	٦.			og ,	-
French Broad River at Long Shoals Bridge2- 6-25		4.8	= 6	ص م	_	æ (0 0		9.0		1				op ,	
French Droad Alver at Long Snoals bruge 3-30-63		111	5 .	77		0.0				.		3 .	2 .	!				g0	
French Broad Biver at Long Shoals Bridge 5-10-29		2.0	٥ م	13.	_	0.10		p 0	* 7	- -	0.6	4.0	. 4 . 6		٠. د			tando ipu	
Franch Broad Bivar at Jone Shoals Bridge 2- 5-30	# 2- 5-30	104	10	8.6	+	1.7	T		1	1	12	3.4	0		4	†	+	do	T
French Broad River at Marshall	5- 7-45	28	2	11	_	4.6		9.8		0	12	23	2.0	٦:	6			J. S. G. S.	
French Broad River at Hendersonville	5- 8-45	28	18	9.0	_	5.6				0	13	16	8.8	0.	٦.	_		op	_
French Broad River above Rosman	1-21-25	6.3	9	15		1.0		1.4	ະວ	0	8.1	2.4	9.		.15			ф	
French Broad River above Rosman	9-30-25	18	50	9.6		1.1		8.	9.	0	5.4	1.5	9.	-	2.		_	qo	
French Broad River at Rosman	3- 8-45	9	80	6.0	_	.7		2.5	23	0	7.0	1.1	9.	.1			\vdash	op	
Green River near Tuxedo	8-30-27	15	ឧ	9.2		1.8		1.5		0	12	1:1	2.2	1	~			andolph	
Hominy Creek near Asheville	6- 4-28	18	12	7.8		1.6		6.	9.	0	8.5	۰.	2.2	1	.21			ф	_
	7-25-29	52	0	12		5.9		6.5	1.3	0	22	11	0.9	1	.26			3d. of Health	-
ond	9-19-29	25	4.0	12	_	4.3		12	1.8	0	3.0	20	4.0	-	.4		_	qo	
	8- 9-45	45	9	13	.03	3.8	1.4	4	6	0	24	3.2	1.5	۲.	9.			J. S. G. S.	
Hominy Creek at Candler	7-25-29	19	0.	13	• 02	6.0	2.1	4.2	2.1	0	52	7.4	4.0	1	40.	_	_	d. of Health	
Hominy Creek below Candler	9-19-29	30	œ (91	25	8.8	4.1	2.7	1.6	0	16	e. 6	0	1	<u>.</u>	111	ю.	op ,	_
Ivy River near Marchall	5- 9-45	17	9	13	-02	3.6	1.7	3.4	4	0	22	3.0	0.	-:	.7	39	9	J. S. G. S.	_

MISCELLANEOUS MEASUREMENTS IN FRENCH BROAD RIVER BASIN (CONTINUED)

Scuroe and Location	Date of		Color		Iron Ca	Calctum	I U	Sod i um	Potas-	Carbo-	Bicar-	Sul-	Chlo-	Fluo-	N1-	Total 1	To tal	Authority
	COLIGOTION	Matter	-	2010	D.	5	₹	# #	K	200	ECO3					70 0	CaCO	
Jonathan Greek near Cove Greek	4- 2-45	96	20	7.4	-	1.6	0.5	1.0	22	0	8.0		4.0	0.	6.			U. S. G. S.
Little River near Davidson River	9-30-25	21	9	1,		9.1	9.1	1.2	ب. م	0 0	7.1	9.6	ro,	; -	٠. و.	53	9,6	op -
Little River near Penrose	3-8-8-6 0-8-6	9-	3 60	4. 0	_	, ,	•	7 2 .	,	- c			• q	-!	. 1		, u	9 6
Mills River near Mills River	9-30-25	0.0	20 -	12			1.0		3 00	0	, w) L		. 01		0.0	g op
Mille River at Mills River	3- 8-45	80	20	5.2	1	8.	4		İ	0	7.0		9.			T	4	qo
Mud Creek at Naples	8- 9-45	75	9	12		9.3	6.	4.5	22	0	11		1.8		~		ខ្ម	op
Molichucky River at Poplar	9-27-45	99	9	9.3		8.3	1.1	2.5	10	0	16		1.0		4.		12	qo
North Toe River at Altapass	5-14-45	21	12	7.9		2.2	1.0	2	6 2	0	14		9.	0.	ω.		91	op,
North Fork Ion River at Spruce Pine	9-13-25	28	8.0	8.8	+	5.6	1.8	2.1	.7	0	20	+	5,6		44	\top	97 61	do do
Morth Toe Alver at Spruce Fine	92-11-0	, ,	# 0	1.		9 4	r 6	1.1	9.4	o c	3 4		- a		- 46		34	3 -5
Nowth We Owner out of the Me.	4-14-45	٠.		# C		9 4	. 10	:		o c	10	_	9 6				9	do
	_	1 81	2 00	8 .0	_	9	, φ	æ	ږما	0	. w		2.7		.12		7.3	Randolph
			9	8.4	_	8.8	1.3	23	0	0	16		1.0		.1		12	
Pigeon River at Canton, above mill	12-13-28	2	01	12	.12	2.5	1.0	3.2	1.6	0 (16	3.0	0.0	1 0	60.	41	10	Bd. of Health
Pigeon River at Canton	4-14-45		7	2.9		».	က်	27		0 0	ဝ ရ	-	B. 5		2		٥ ١	U. S. G. S.
_	12-13-28		7.40	10			n (0.0	> 0	, a		10		•			
A Pleast Blear at Woodrom	8-16-27	9 6	¥ C			4.1	2 -	4.3	1.4	0	15		0.0		H MS			Randolph
Diot Case See See	0-22-08	66	2	200	+	4	a	000	4	0	2	-	1 2	Τ	26	T	7.5	Rd of Health
Plott Greek near Marelwood	5-24-44	77	, ;	3 7		0	. 0			. 0	2 22	1.8	2 49		4			U. S. G. S.
Reems Creek at Weaverville	12- 4-43	: :	7	18		3.0	1.6	8.8	~	0	20		1.4		ls.			qo
Reems Creek near Weaverville	5- 7-45	16	2	21		2.4	1.0		lio.	0	16	_	1.2		4.	_	-	qo
Richland Creek near Wayneeville	6-30-27	11	2	3.3		3.9	. 7	1.9	9.	0	11		3.5		.16		-	Randolph
Richland Greek at Waynesville	5-24-44	18	91	9.2		0.3	80	2.4		0	13		9.		4.1		ω ,	U. S. G. S.
Richland Creek at Waynesville	4- 2-46	478	75	7.7		9 4	, c	20. 4	o •	0 0	13	_	٥. د			_	2 6	do do
Spring Crook at Hot Springs	12- 4-45	i :	ο α	0 0			2 6		9 10	o c	3 5		0		. 0	_	14	g op
Spring Creek at Hot Springs	5- 8-45	18	4	:::			0	8.8	· •	0	17	2.5	ı,				1	qo
South Fk. Mille River at The Pink Beds	L	1	7	5.5		9.	10.	2.0	0	0	6.0	\vdash	4		٠		10 C	op .
South Toe River at Mewdale	5-14-45	- 6	2 9	e ;		4.	φ.		1	0 0	0 0	T	•		٠.	9 6	100	9 7
Swannanoa River near Asheville	2-26-25	77 C	י מ	=		٥.٠	# C	- ŭ	•	o c	D 10	• •	, .		7 4	0 %		9 0
Swannance River neer Biltmore	6- 9-27	2	٥ د	2 0	_) P?	-	ıc	• •	7.2	2.5	0 0		25	23.53	9.6	Randolph
Winchester Greek mear Balsan	8-25-27	1 1	- σ	8		4.5	1.6	2.0	ω,	0	18		1.0			37	15	qo
		1			1		1											
						PUBLIC	WATER	SUPPLIES										٠
Asheville	422	:	:		<u> </u>	8.0	9.0	1.8	0.5	0	7.3	1.7	0.7		race	19	*	
Acheville	9- 5-28	!	:	-		.7	.2			6.1	:	2.0	•		ra.00	22	4	F. & R., Ino.
Asheville	5- 1-44	:	23	-		œ.	ı,	1.2	63	0	4.0	1.7	1:1		٦.	4	4 1	
Black Mountain	5- 2-45	Ν 6	٠.	6.0	20.	9.1.	9.0			0 0	12	0.4	9.	0, 1	-: -	22 c 25 c 25 c		do
Waynest 11a	8-16-27	4 00						9.0	o w		9.0	-i 15	. 0		1 0	3 2	- ω	op
	2	,	-	┥	4	,				,		;	-	7				

CATHEYS CREEK IN SELICA At Highway 64 Bridge by Tennessee Valley Authority

								_					
	Total hard- ness CaCO3	7	10	=	9	α	9	6	<u></u>	m	9	2	7
	Total Dis- solved Solids	23	35	16	20	20	15	21	27	22	29	27	20
	Ni- trate NO3	0.0		17,77	2,5	0	ુ	0	, 0	઼	5.3	्	1.4
	Chlo- ride	-	2	8	7	r -1	· ~-	-	77	٠,	-1	8	~
	Sul- phate SO ₄	2.9	7,2	7,2	2,5	6,3	6,9	7.6	6°2	ц Л	5.8	2.4	1,3
	Bicar-Sul-bonate phate		8 7			6,1	7.3	8.5	6,1	7.3	6,1	ش	1 1
	Sodium Na	1,2	.92	0	2.5	2,3	4.1	3.4	2.3	3,0	5,3	2.1	2.1
c	Magne- sium Mg	1.0	1,3	1,0	99°	.82	,144	.93	7,5	.27	09°	67°	°52
. million	Iron Calcium Magne- Fe Ca sium Mg	1.2	1,8	2,5	1,2	7,8	1.4	1,8	0,0	09°	1,2	2°0	1,0
Parts per		0.0	r,	۲,	0.	ૃ	्	್ಠಿ	ૃ	0.	ૃ	•	ૃ
Par	Silica SiO ₂	8	Λ	9	ω	ထ	8	6	2	7	∞	10	∞
	Color	0	17	9	7	25	7	5	9	72	Ŋ	10	Ŋ
	Sus- pended Matter	<i>N</i> .	<i>τ</i> υ	~	12	Ŋ	0	10	8	77	17	0	28
	Temp.	62	63	51	775	77	39	23	23	67	99	89	63
	Disch. SecFt.	14	25	15	177	37	18	37	718	53	24	177	16
	Date of Collection	Aug. 20, 1944	ept. 21, 1944	ct. 12, 1944	ov. 24, 1944	ec. 29, 1944	an. 27, 1945	eb. 27, 1945	ar. 26, 1945	ay 2, 1945	ay 30, 1945	uly 13, 1945	Aug. 9, 1945
		Æ	נט	9	_	Н	اد	14	2	2	2	2	Ä

FRENCH BROAD RIVER ABOVE HORSE SHOE At McLean Bridge on highway 74 by Tennessee Valley Authority

					ny tem	Parts	og remmessee variey Audhoricy Parts per million	Autor. Llion	ري 1 دي						
Date of	Disch. Temp.	Temp.		Color	Silica	Iron	Silica Iron Calcium Magne-	Magne-	HE I	Bicar	Sul-),h10	Ni-	otal	Total
notracerton	Decr. r.	4	penaed		2016	ນ ບ	т С	Slum	Na Na	bonate	phate	, ide	trate)is-	hard-
			Matter		l			Mg		HCO ₃	$s_{0_{1}}$	CJ	No3	solved	ness
										`	t		` .	olids	CaCO ₃
July 25, 1944	410	72	7	80	16	0.8	6.2	2.1	7.6		7.4	9	0.9	779	24
ug. 30, 1944	300	79	23	190	ω	700	ත ග	1.9	10		8.9	\mathcal{N}	्	101	30
ept. 28, 1944	370	79	24	75	7	6.	0°2	2.4	15		7.4	11	2,1	81	27
ot, 12, 1944	370	54	20	55	7	ೣ	5,1	1,2	114	37	7,7	7	3,5	75	17
10v. 24, 1944	750	143	28	110	17	ૃ	6.8	°76	12		5.6	7	ಂ	81	20
lec. 29, 1944	820	13	19	8	ထ	्	κς α	1,6	8,3		2	7	1,04	28	21
an. 27, 1945	019	39	7	20	11	्	7.6	.93	12		13	9	0	52	16
eb, 27, 1945	1330	50	24	5	10	्	2,0	1,1	0,8		7.8	m	1.4	171	10
lar. 26, 1945	900	95	30	09	13	ૃ	0° 7	1.7	5,1		4.5		0,	148	17
lay 2, 1945	1250	54	31	5	6	0	2°6	99°	4.1		ص ش	2	्	32	6
(ay 30, 1945)	200	69	21	20	10	ૃ	5.6	1,00	10		0°2	-	0	69	19
uly 13, 1945	390	68	ω	120	10	9.	0°2	.87	15		5,1		0	87	21
				-	-			-	The same of the sa			The Particular Spirit Street, Spirits			

FRENCH BROAD RIVER AT ASHEVILLE At Carriers Bridge by Tennessee Valley Authority Parts nor million

1		_														
	Total	hard-	ness	CaCO3	20	24	17	18	174	77;	디	10	16	3	12	15
	Total	Dis-	solved	Solids	88	43	39	37	28	32	23	13	31	38	2	36
	Ni-	trate	NO ₃		0°0	0,	00°	.89	00°	00°	00°	.77	00°	00°	8	68°
	Chlo-	ride	CJ		9	7	2	2	r{	2	2	2	2	\sim	\sim	2
	Sul-	phate	SOL	-	29	بر ش	8°7	5,0	5.8	.97	8,4	20	8,6	1,07	17	4.7
	Bicar-	bonate	HCO_3		16	32	13			12		12	∞ ∿	13	16	22
	Sodium	Na		and the second s	15	η°9	4.4	917°	3,0	4.4	7,0	т°9	Lell	3.9	A	5,5
Lion	Magne-	sium	Mg	Special continuous and an analysis of a continuous and an analysis of a continuous and an analysis of an analys	1.9	8,8	l V	2,0	1,5	1,6	0°7	1,2	2,2	J°0	1,1	1,5
per mil.	Calcium	Ca			4.8	14.8	3°0	3,88	3,2	2,8	2.6	2 °0	2,8	3.4	2°8	
Parts	Iron	Fe			0°0	0,	೦	ಂ	၀့	0,	0	o,	ಂ	ୃ	ಂ	0,
	Silica	Si02		A de de la companya d	15	13	6	6	10	6	11	6	6	10	10	12
	Color	***************************************			100	11.5	25	13	22	15	뒩	15	25	20	50	15
	Sus-		Matter		34	148	35	N	ير.	0	0	9	36	13	0	17.
	Temp.	[1			92	69	58	77	15	44	77	20	57	52	72	8
	Disch.	Sec Ft.			750	650	1300	096	07/2	970	1040	2210	2770	1680	1250	1230
	Date of	Collection			July 24, 1944	Aug. 22, 1944	0ct. 2, 1944	oct. 24, 1944	Nov. 27, 1944	Dec. 27, 1944	Jan. 27, 1945	Feb. 28, 1945	Mar, 29, 1945	May 9, 1945	May 29, 1945	July 6, 1945
																-1

HOMINY CREEK NEAR ENKA At highway 112 Bridge 2 miles west of Enka by Tennessee Valley Authority

									_					_				1
	Total	hard	ness	caco ₃	16	17	00	ונ	5	27.	<u>구</u>	H	13	T.(0	15	15	
	Total			Solids	31	34	α	0 1	72	47	34	27	36	36	33	36	41	
	Ni	trate	NO ₃	,	0°0	0	_	†° 17	4.4	.71	2,0	င့	1,8	14.5	68°	2,8	<u></u>	
		Н	CJ		2	 i	(~	~	m	2	2	2	2	-	Н	2	
	Sul-	14	s_{0}		5.4	3,2	, ,	4.5	3°0	8°7	°79	7,	7.0	I	12.4	ν ω	7,1	
		bonate	HC03		18	77	- (2.7	21				11	. 10	11	97	18	
	Sodium	Na			3.7	6,	` -	0° 7	5°8	6,2	4.1	5,1	2,5	4,1	2°3	5,1	5,1	
,	Magne-	sium	Mg		1,5	2,0) (9,2	J°6	1,0	ı Z	.93	1,3	2,3	9°	1,2	1,2	
Parts per million	Silica Iron Calcium Magne-	g			3.6	3.6) (え。と	3,1	3.0	3.4	2°8	3,2	3,0	2.4	3.0	0,0	
ts per	Iron	Fe			0.0	C) (~	ņ	o°	ಂ	0	0,	0,	0	0	0	,
Par	Silica	Si02			11	۲,	, ,	9	<i>~</i>	13	검	13	13	12	10	12	12	
•	Color				44	200) (50	20	35	13	15	35,	50	35,	15	3,	
	-sno	pended	Matter		77	α) i	19	24	72	70	, <u>2</u> 0	54	79	. .	12	1 09	
	Temp .	@ [±4			73	, <u>r</u>)	2	54	43	77	113	78	52	22,22	99	68	2
	Disch。	Sec Ft.			31	1 00	2	33	917	36	30	37	87	011	001	7 1	/~	\t
	Jo	ction			1/1/61 1/6	יןיוסר רכ	+	15。1944	13, 1944		161,191		26, 1915	28 1915	0	ران اران اران	10, c	ノカノエ るし
	Date of	Colle			יש[ווו]	, to	o Snw	Sept.	Octo	Nov	Dec	בים מים מים	Feb. 26.	Mar	May 3	Moy 2	י לייון.	ou⊥y

NORTH FORK SWANNANOA RIVER NEAR GROVESTONE At highway 70 Bridge by Tennessee Valley Authority Parts per million

Total hard-	ness CaCO ₃	_+	C)	CI.	6	6	CI.	<u>~</u>	ထ	20	9	2	7
		1	7	Ä			۲ —		ω	7			
Total Dis-		19	25	29	20	22	57	19	37	25	16	33	ر د د
	NO ₃	3.7	0	0,	0	၀့	o°	o°	0	o°	o°	o°	3,9
	ರ	2	H	7	2	7	2	7	٦	7	٦	٦	^
Sul-	$\frac{160}{3}$ so_{4}	4.2	0°9	6°9	2.7	2.6	64°	9 2,5	13	10	2,8	13	2,6
	HC03	9°8	ത ഹീ	7,3	6.1	6,1	6,1	7,3	6°7	6,1	7,3	7.3	α Λ
Sodium		2,1	1,4	1,2	°95	,23	69°	9°7	5,1	1,2	2,1	6,9	[]
Magne-	Mg	2,2	ا گ	ا گر	86°	°55	1.20	.77	.93	2,2	647°	99°	.93
Calcium		2 00	2°0	2,4	2 °0	2.6	2°6	1,8	1.4	2°2	1.6	1.04	0, [
Iron		0°0	ဝ့	o°	ô	၀့	o	o°	o°	o°	o°	0	C
Silica SiO2	J	6	6	7	7	7	9	2	2	7	7	2	6
Color		2960	55	23	38	240	ν .	ίΛ	Ŋ	200	80	097	9
Sus- pended	Matter	1,70	110	700	160	197	0	0	16	188	168	190	680
Temp.		65	99	19	20	148	元	36	917	53	20	20	68
Disch. SecFt.		9	W	2					105				
		1944	1944	1944	194年	1944	1944	1945	1945	1945	945	1945	70,7
Date of Collection		July 25, 1944	9. 22,	t, 2,	t. 24,	v. 27,	30°,	1, 27,	5. 28°	r. 29.	v 9, 1	v 29°	14 6
A S		Jul	Aug	Oct	00	No	Dec	Jar	Fel	Maı	Ma	Ma	.[1,

NORTH TOE RIVER AT SPRUCE PINE
At highway 19 Bridge
by Tennessee Valley Authority
Parts ner million

	a]	ģ	ω (S													
	Total	hard=		s caco3	2	16	16	16	7	7	기 	12	3 	7	12	7	A Commission of the Commission
		Dis-	solved	Solids	07	39	97	37	35	31	32.	43	32	17	37	33	The state of the s
		trate	NO ₃		0.7	0	.71	1,04	8	2,1	1,6	1,04	2,1	.71	2 0	 8	And a series of the series of
		Н	CJ		2		~	4	2	~	2	-	2	2	Н	7	A
		14	so_{l_1}		8.6	14.8	7.1	5°6	3.7	4.9	2°8	9.2	6.7	2,0	3.6	3,9	
		bonate	HCO ₃		18	17	13	12	13	10	12	I	12	11	15	18	
	נט	Na			3.0	1,8	2°8	1.4	3.2	1,8	3.2	7.7	1.6	1.6	3.0	3.4	
		sium	Mg		2,5	1,8	1.9	1,6	.87	1.7	1,2	1,6	2,6	1,2	1,0	1.4	-
-	Iron Calcium	Ça			4.4	3°6	3.4								3.0		
1	Iron	ъ			0°0	0,	0,	ô	o°	0	0,	0	o°	0	0,	0,	
	Silica	SiO	ı		6	6	6	6	10	6	10	6	10	6	6	10	
	Color				56	240	38	32	38	25	8	20	30	50	30	25	
		pended	Matter		59	125	73	21	57	6	29	31	28	29	19	23	
	Temp.	[L]			B	72	63	748	142	70	35	50	56	62	99	73	
	Disch。	SecFt.			72	20	180	220	280	210	180	320	360	270	220	160	
		ction			25, 1944	22, 1944	2, 1944	24. 1944	27, 1944	27, 1944	27, 1945	28, 1945	29, 191,5	1915	June 4, 1945	6, 1945	
	Date of	Collec			July	Aug	Oct.	Oct.	Nov .	Dec.	Jan.	Feb.	Mar	May 9	June	July	6

PIGEON RIVER AT CANTON At highway 19 Bridge by Tennessee Valley Authority

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					•	3	TOTTTTIII TOJ	11011							
Date of	Disch.	Temp.	Temp. Sus-	Color	Silica	Iron	Calcium	Magne-	Sodium	Bicar-	Sul-	Chlo-	Ni-	Total	Total
Collection	SecFt.	o FJ				ъe	Sa	sium	Na	bonate	phate	ride	trate		hard-
			Matter		l			Pil Pil		HCO3	80)	CJ	NO3	solved	ness
						-				`	t		`	- 1	CaCO3
July 24, 1944		77	L	21	8	0.0	2 00	0,8	3.5		3.9	2	0°0	56	6
Aug. 21, 1944		75	10	19	ω	0	5°6	1,0/1	2,	6	3.7		0,	30	12
Sept. 20, 1944		8	17	17	7	2,	1,8	2 در	1,2	12	3,2	~	68°	55	15
0ct. 11, 1944		8	11	15	八	ņ	1,9	1,01	2,1	11	5°6	-	2.7	10	11
Nov. 20, 1944		111	0	18	ω	oʻ		777°	4.8	6	8,5	7	00°	12	7
Dec. 28, 1944		£13	0	70	<u>~</u>	0,		1,3	2,1	9	7.3		.71	22	10
Jan. 27, 1945		710	0	10	H	0		.82	7°7	~	9°6	-	00°	12	<u> </u>
Feb. 26, 1945		74	24	70	2	0	٦,8	99°	2°8	N	5,1	1	2,5	32	2
Mar. 28, 1945		52	28	15	7	0°		1.9	917°	9	6°9		00°	24	13
May 3, 1945		51	177	15	7	0		.27	8,8	2	1,8		.71	23	7
May 31, 1945		29	ω	N	6	ó		889	3.4	6	တွ		8	28	10
July 3, 1945	116	72	30	건	ω	0		1.2	3.0	10	7.4	_	00°	27	10

RICHLAND CREEK AT WAYNESVILLE At highway 284 Bridge by Tennessee Valley Authority

Γ		,		الہ												
	Total	hard=		CaCO ₃	10	77	19	13	77	12	10	15	12	∞	10	12
	Total		solved	Solids	28	30	74	36	56	32	22	35	31	8		33
		trate	NO ₃	\	0°0	o°	68°	2,3	3°2	2,0	1,04	2°8	00°	.77	<u></u>	%
		ride	ت ت		2	٦	2	0	2	~	Н	٦	7	Н	_	2
	Sul-	1-4	SO)	t	4.4	2°8	3.9	3,0	9°6	7.1	2°6	4.4	3,1	٦ گ	5°4	0°9
	Bicar-	ø	HCO3	`	13	13	18	16	12	10	10	6	11	11	10	15
	Sodium	Na			3.9	ν̂	1,2	2,1	7,5	3.9	3,5	940	.92	2,1	2,3	3.9
llion	Magne-	sium	Mg		1,1	1,7	5,6	1.7	1,2	1,3	1,1	1.0	1,3	92°	.93	1,3
per million	Iron Calcium Magne-	Ça			2,2	3,0	5°6	ر ا ا	3.4	2,6	0,2	0°7	2,4	2°0	2.	2.8
Parts	Iron	ъ.			0°0	0	Q	٦	0	Q	, O	0	0	0	0	ွဲ့ဝ
,	Silica	Si0,	J		11	Ħ	у.	, 9	11	80	6	10	10	10	2	15
	Color				1,8	7,	, ∞	· ~	15	۲,	0	70	10	20	, J.C	15,
	Sus-	pended	Matter		63	15,	ار 9	ω	0	9	0	16	17	27	27	8
	Temp.				7.1	2	t B	8	1.7	; <u>-</u>	<u></u>	29	52	1	7.3	269
	Disch。	SecFt.			Oil	200										74
					1/1/61	1/1/6L LC 2017	1011	19/1/6	1611	10116	7 1915	7,61	8 1915	19.7t 7.10 L	ת'סר	July 3, 1945
	Date of	Collection			2 v [u].	Δ110	Sent	0. to 0	Nov. 2	The contract	o nel	Feb. 2	War. 2	May 3	Mary 27	July 3

SPRING CREEK AT HOT SPRINGS
At highway 25 Bridge
by Tennessee Valley Authority
Parts per million

	Total hard-	ness	CaCO3	18	18	22	17	19	22	T	77	13	12	Ħ	18
	Total Dis-	solved	Solids	元	2	다	70	56	24	27	20	32	31	<u>T</u>	51
	Ni- trate	NO3		0.0	o	3,0	3,5	0,	3.7	2.7	2,1	68°	8	00°	.71
	Chlo-	CJ		2	7	7	7	7	m		1	7	7	Н	2
	(0)	SO),	t	7.8	3.4	5°4	3,0	3.7	11.3	10,2	10,6	3°4	2.7	ب ش	2,1
	Sodium Bicar- Sul-	HCO ₂ 50),	`	22	23	22	24	20	22	12	13	51	15	50	21
	Sodium Na			3.7	2°5	2,1	6.7	1,2	7,1	ر گ	5,1	2.3	2,3	9.4	2.3
	Magne- sium	Mg		1.9	1.9	2.0	1。7	1.9	2,2	1.0	1.5	1.2	1,1	.87	1.4
rarus per million	Iron Calcium Fe Ca			4.2	7,04		3.9		ಌ೦	3,2				3,0	
rs per	Iron Fe			0.0	ૃ	2.	°,	o.	ૃ	ૃ	಼	0°	၀့	၀့	o,
rar	Silica SiO2	1		13	77	2	8	13	7	2	12	11	12	13	15
	Color			25	35	20	8	10	35	15	20	20	50	15	15
	Sus- pended	Matter		62	19	253	3	0	27	7	24	07	16	H	4
	Temp. Sus- °F pend			70	69	i	8	1,1	7	34	47	79	617	20	7.1
	Disch. SecFt.			8	10	ω	15	5h	153	ሌ የ	83	145	90	017	56
	Date of Collection			July 24, 1944	Aug. 21, 1944	Sept. 22, 1944	0ct. 13, 1944	Nov. 23, 1944	Dec. 30, 1944	Feb. 5, 1945	Mar. 2, 1945	Mar. 30, 1945	May 4, 1945	June 5, 1945	July 14, 1945



CLIMATOLOGICAL

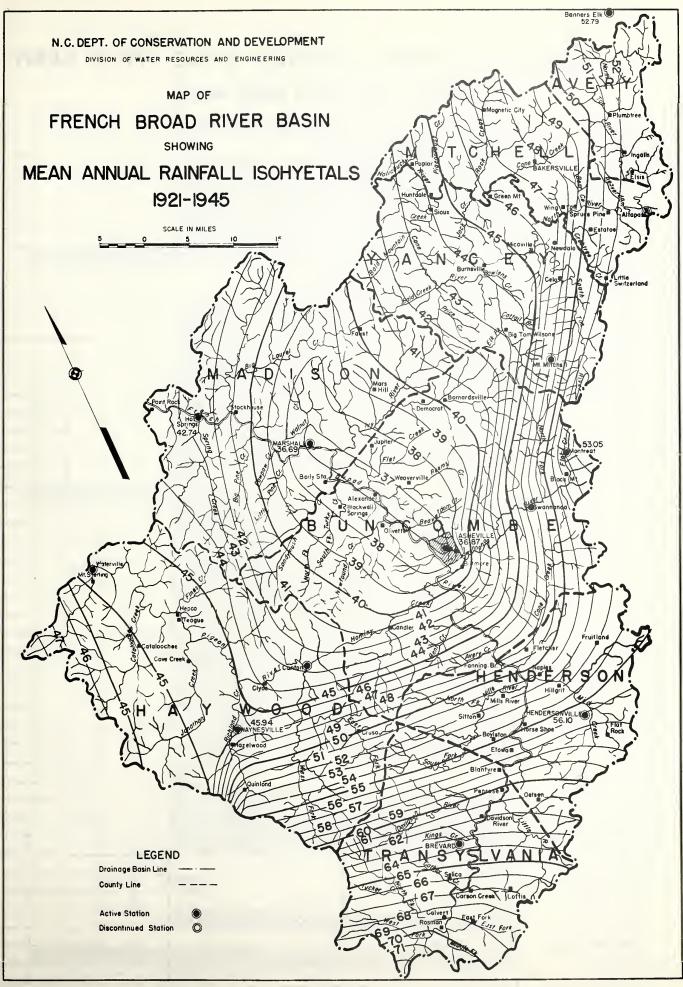
The United States Weather Bureau at the present time is operating 12 rainfall stations in the French Broad River Basin and records of temperature are collected at nine of these stations. The Tennessee Valley Authority has established 44 rainfall stations in this basin since 1935 and has carried on three others that were established prior to 1935. Only four stations in the French Broad River Basin are published in this report, but one other record located at Banners Elk which is near the river basin line is used. A very good idea of the climatological information at any point in the basin can be had by comparing the published data with the maps showing rainfall isohyetals and temperature isotherms. No attempt has been made to show the records collected by the Tennessee Valley Authority as they are comparatively short records. Information on any of these stations operated by the U. S. Weather Bureau or the Tennessee Valley Authority may be secured by writing the Division of Water Resources and Engineering of the Department of Conservation and Development, Raleigh, North Carolina; or the U. S. Weather Bureau, Raleigh, North Carolina; or the Hydrologic Data Branch of the Tennessee Valley Authority, Knoxville, Tennessee.

Mean annual temperature for the 25-year period of 1921-45 is 55.2 degrees as recorded at seven temperature stations including Banners Elk. Temperature stations in this river basin are very scattered and some of the records that are available cannot be used since they have so much of the record missing. Probably the coldest spot in the State is Mount Mitchell but due to missing record it was impossible to show a 25-year mean. Lowest temperatures will be found along the eastern edge of the basin with higher temperatures being found on the western edge.

Mean annual rainfall for the 25-year period of 1921-45 is 46.31 inches as recorded at seven stations including Banners Elk. Rainfall stations with as much as a 25-year record are very scattered in this basin and some have too much missing record for them to be of much value. The section of lowest annual rainfall for the whole state is found in this basin between Asheville and Marshall. While the highest annual rainfall is found in an adjoining basin near the southwest edge of this basin.

RAINFALL STATIONS IN FRENCH BROAD RIVER BASIN SHOWING RECORDS AVAILABLE

Altapass		
Asheville		
Banners Elk	C	
Brevard		
Canton		
Hendersonville		
Hot Springs		
Marshall		
Montreat		
Mt. Mitchell		
Swannanoa		
Waterville		
Waynesville		



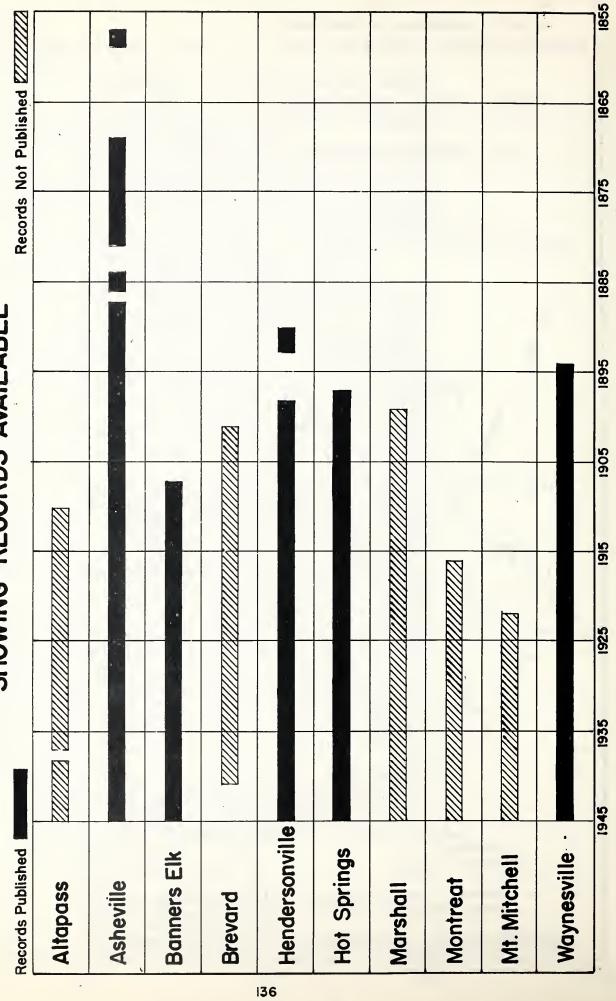
T.V.A. RAINFALL STATIONS IN FRENCH BROAD RIVER BASIN SHOWING RECORDS AVAILABLE

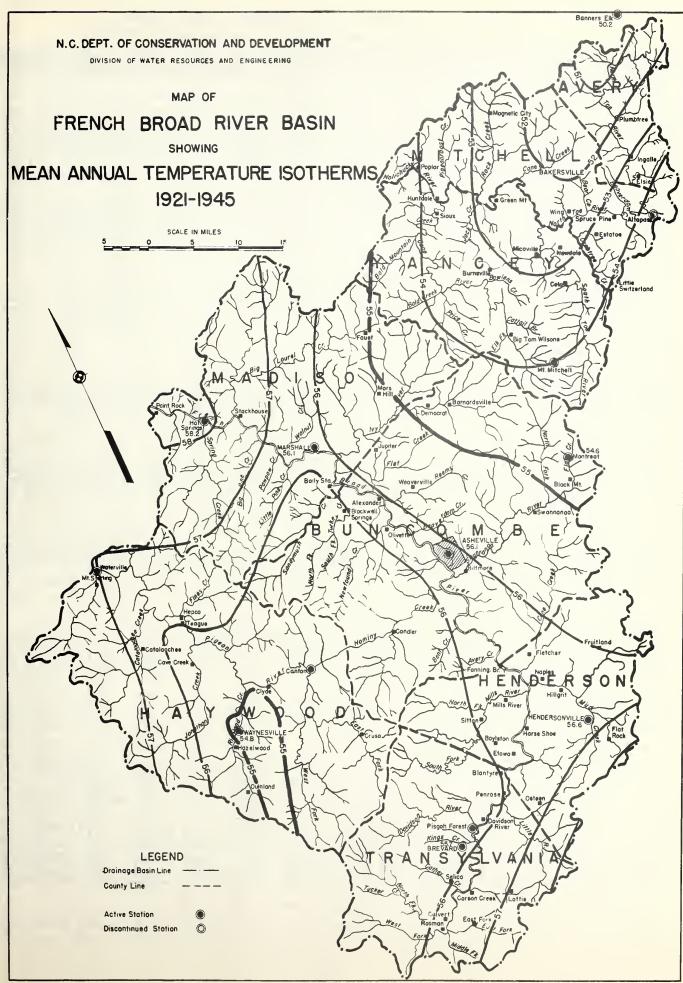
A.& H. Airport	7/////	//////	//////	//////	/////	//////	//////	/////	11111	//////					
Bakersvill e	7////	//////	/////	//////	/////	//////	1								
Barnardsville	7/////	//////	/////	//////	//////	//////	//////	/////	//////	/////					
Beetree Gap	7/1///	//////	/////	111111	//////	/////	7////	/////		//////					
Big Pine	7/////	//////	/////	//////	11/1//	//////	//////	//////	1/////	1/////					
Blue Ridge P.O.	//////	//////	/////	//////	/////	11111	//////	//////	111111	11111					
Cane River	7/1///	111111	/////	//////	1////	//////	//////	(1/1//	//////	11/11/					
Canton	7////	//////	7/1///	//////	/////	//////	//////	//////	/////	WIII	7////	//////	/////	11111	
Cataloochee Ranch	7/1///	//////	//////	/////	/////	//////									
Cedar Mountain	//////	//////	//////	/////	//////	111111	11/11/	/////	/////						
Celo	/////	///////	/////	111111	//////	//////	//////	/////	//////	11/1/1	7				
Chambers Mt.	7////	//////	7////	/////	//////	//////	//////	/////	//////	//////					
Cody Store	7/////	//////	7////	/////	/////	//////	/////	/////	11///	//////					
Cove Creek	7/////	//////	/////	//////	/////	/////	//////	/////	/////	11/1/1		-			
Coxcombe Mt.	7/////	//////	/////	//////	11111	/////	1////	/////	/////	/////		ļ			
Daybook	7////	/////	/////	111111	/////	//////	/////	//////	/////	/////					
Dick Creek	7////	//////	/////	/////	/////	11/1//	11111	/////	/////	/////					
Doggett Gap	11111	//////	/////	11////	/////	1////	//////	//////	11111	/////					
Eaglenest Mt.	7/1/1/	//////	/////	11/1/1	/////	0/////	111111	//////	1////	11111					
Eastatoe Gap			11,11							//////		-			
Enka	111111	7/////	/////	<i>111111</i>	111111	111111	111111	77777	111111	111111	0////	//////	/////	11111	
Flat Top Mt.	7/1/1/		(/////	1/////	/////	V/////	//////	/////	/////	011111			77777	77777	_
Garren Creek	711111	11/11/1	11/11/	111111	(1)111		11/1//	//////	111111				-		
Haywood Gap	11111	//////	77777	/////	7/4///		77777	77/11/	111111	111111					
Horseshoe	771111	77777	77777	11/////	777777	/////	77777		777777				-	-	_
	71111		//////		//////	111111	111111								
<u>tvy</u> Leicester	777777	///////		7/1/1/	//////	777777			111111						_
Little Switzerland	71111	111111			(////	11/1/1	777777	//////	777777						_
Lonesome Mt.	7////	111111	11111		111111	VIIII				7////					
Max Patch Mt.	77///		,,,,,,		7////	111111	111111			111111					
	7////	· / / / / / / / / / / / / / / / / / / /	111111	111111		1111111	77777				 				
McKinney Gap	7////	7/////		7/////	,,,,,,	<i>,,,,,,</i>		,,,,,,	Y/////	//////					
Mount Pisgah	1/////	//////			//////	111111	//////		VIIII	/////		-			_
Mount Sterling	(1/1/1	(11/1//	//////	//////	11111	//////	<i>,,,,,,</i>		(/////	(/////	-		_		
Pink Beds	77777					Y/////			,,,,,,	,,,,,,	_				
Plumtree	111111	/////	(/////	(/////	V/////	Y/////	//////	/////	VIIII	/////				-	
Plumtree Mt.	10000			,,,,,,,	111111	77777		,,,,,,	,,,,,,	/////					
Rocky Face Mt.	7////	///////	//////	//////	//////	/////	/////	/////	(/////	(/////					_
Rosman	111111			111111	(/////	(/////	11111	/////	11111						
Rush Mountain	7////	111111			11111	11111		/////	11111	V/////					
Snow Creek	(/////	//////	//////	([/]//	Y////	1/////	(/////	/////	//////	111111					
Spruce Pine	7/////									77777					-
Sugar Loaf Mt.										//////	-				
The Pinnacle	7////	1						777		7777					
Tipton Hill		//////	//////	//////	//////	V////	Y/////	(/////	/////	/////	1				
Turkey Pen Gap	711111														
Waterville	111111	//////	/////	111111	X/////	Y/////	//////	//////	Y/////		/////	/////		/////	
Zeh Knob															



TEMPERATURE STATIONS IN FRENCH BROAD RIVER BASIN

SHOWING RECORDS AVAILABLE





Precipitation in Asheville, Buncombe County, North Carolina: Monthly and annual (in inches and hundredths)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1857	Name and the color and and	essa (US) Cur) (providen	acomo aracco cas	OED CAN CHO CHIP CO	one and the anakani	ances co to	6.00	3.80	1.25		One Over-time DESIGNO	3.83	
1858	1.80	2.40	1.10	2.44	2.30	4.60	(200 OF 0 000 EXD BLO	steep (1997 July Streep region)	CTRC 6440 (NO LOS 0440)	CELLORIO des SES COS			Chick comp (Comp (Comp
1869	1.80	3.70	3.70	3.60	3.85	6.40	1.50	2.20	1.50	1.80	2.30	5.60	37.95
1870	3.50	2.30	4.55	2.80	6.70	4.70	6.40	5.60	2.50	2.00	1.80	2.50	
1871	1.13	.59	5.30	3.50	3.60	4.10	3.20	7.40	2.40	2.50	2,20	1.80	
1872	2.00	1.60	1.70	2.20	2.00	3.70	4.20	5.60	2.20	2.70	1.60	4.60	
1873	4.30	9.60	3.30	1.80	5.30	2.00	4.40	4.50	2.10	.90	4.50	2.50	
1874	3.00	3.60	2.70	5.60	2.70		11.40	3 .40	2.80	1.10	3.60	1.70	
1875	6.25	6.20	9.40	4.30	1.40	1.90	5.10	6.81	2.30	1.19	2.74	5.27	
1876	2.80	4.50	6.12	2.56	5.71	7.77	6.29	3.91	2.13	2.19	1.91	1.84	
1877	5.00	.63	6.38	6.87	1.48	5.57	5.20	2 .30	1.50	5.75	5.44		48.82
1878	3.40	4.58	2.38	4.30	3.60	5.18	4.93	4.00	3.81	4.50	4.00	2.70	
1879	3.49	1.25	1.64	3.04	2.31	1.37	4.50	5.10	.70		2.32	5.55	
1880	1.52	1.38	6.60		- U	200 (MIC SHIE WITE CING		1234 COM BAN CHE	C00 (000 Kap C00	(MIC 4000 CAM CAM CAM			
1884	C20 C40 (240 C20)	COR COR THE 600 COR	en	ENDORS GROSS SEA	Cital Compression Comp.	em dipon com	COCCA DE COMO CO	Grant Company Com			1.20	2.91	
1885	4.26	2.39	War con cue cus ONS	1.17	3.95	2 .03	SEED CARD THAN THAN ERED	manue tale can dep	Omercian Crop (moreone	8.35	4.80		
1887	diction on the case	2.71	030 mm (ma) (ma)	000 000 000 000 000			-		Charge Camer Camer (Camer Camer)		_~~~		
1888	.94		-	Other cases (Marris deservices)	ONO DIN ONO GAN LINE	Own Law Care (Mg. Own	, Office cases desire upon, these		CENTRAL DESCRIPTION CONT.	dian case chie che che	and con con can we	2.70	One care care com
1889	2.59	1.68	.43	1.45	5.47	4.77	5.39	5.81	4.28	.49	4.72	.97	38.05
1890	1.42	5.30	2.50	3.93	4.40	1.13	5.86	6.71	3.86	3.77	.29	2.44	
1891	4.45	8.13	6.54	1.86	4.23	2.75	5.67	7.86	3.25	.78	3.60	3.25	
1892	6.52	1.47	3.07	6.01	2.76	7.00	4.93	1.64	annous con ass	geo caso (as easo)	000000 00000 0000	1.60	
1893	3.29	4.74	2.99	1.95	3.80	3.91	2.12	6.24	7.42	5.36	3.89	1.19	
1894	2.44	3.81	1.56	1.21	3.19	2.99	4.94	3.71	3.08	2.68	.54	4.10	
1895	4.92	1.70	3.95	4.04	4.90	2.33	2.32	5.03	.85	.21	2.78		36.81
1896	3.38	2.84	1.92	2.50	4.11	4.46	7.26	.87	3.87	.87	5.57	.84	
1897	1.78	6.35	7.03	3.81	3.59	6.09	4.40	3.20	.54	2.70	1.37	3.18	
1898	3.60	.37	2.95	3.42	2.49	4.34	6.68	6.90	6.05	5.99	1.87	2.51	
1899	2.17	7.36	9.04	2.86	1.96	3.35	3.33	2.87	1.98	1.39	1.35	3.01	
1900	2.26	4.67	5.53	4.18	.99	8.11	1.99	2.54	3.39	2.92	4.62		44.66
1901	2.48	.91	5.22	4.56	6.24	2.76	4.01	10.04	3.78	1.04	.73	8.77	
1902	1.63	6.86	3.93	1.83	1.40	3.84	.94	2.17	6.21	1.43	1.90		34.44
1903	1.61	7.02	7.06	4.38	1.14	5 .55	5.59	3.12	.82	1.77	2.32	.80	
1904	1.42	2.06	4.34	1.64	3.17	4.01	2.61	3.55	2.13	.02	3.10	2.02	
1905	2.85	3.49	2.13	3.11	5.59		11.71	4.08	1.13	1.93	.26		45.56
1906	6.69	1.04	3.62	2.35	2.83	6.70	4.60	3.89	5.72	3.44	2.54	1.91	45.33
1907	.27	1.12	2.69	3.89		3.06	2.52	2.84	4.57	.50	3.00		31.53
1908	3.63	3.10	2.87	3.77	3.06	.91	7.56	7.44	2.32	7.27	.83	3.59	46.35
1909	1.58	3.60	5.05	3.75	7.75	7.74	5.54	4.58	2.59	3.28	.07	3.19	48.72
1910	2.42	2.39	.72	1.72	4.65	5.44	4.65	9.12	1.52	2.64	•35		38.10
1911	1.62	2.19	3.03	4.87	2.69	1.35	2.49	8.63	2.26	3.83	2 .20	2.60	37.76
1912	1.10	2.86	4.70	4.17	2.94	4.02	4.64	1.88	3.51	1.54	2.00		34.26
1913	2.95	1.59	5.42	3.24	5.12	2.90	3.16	2.41	4.15	2.52	.81		36.79
1914	.89	2 .24	2.34	3.13	.71	5.34	3.31	5.48	2.09	5.83	4.06		41.93
1915	3.41	2.78	2.00	1.09	4.53	4.74	2.78	4.26	4.09	3.33	2.20		40.22
1916	2.54	3.73	1.74	1.35	3.60	5.15	9.28	2.80	1.72	2.86	1.36		37.70
1917	2.58	2.21	5.76	2.80	1.30	4.43	3.84	4.58	4.42	1.81	.27		35.48
1918	4.56	1.98	2.25	2.74	4.38	6.53	2.74	5.07	3.00	11.32	1.78		51.08
1919	4.70	2.01	4.23	2.11	3.84	4.05	3.88	1.77	.30	1.93	.54		31.45
1920	1.90	1.95	5.65	5.43	2.06	2.42	3.75	7.09	4.20	.47	3.15	4.97	43.04

Precipitation in Asheville, Buncombe County, North Carolina: Monthly and annual (in inches and hundredths) Continued -

1-		MOII		id aiiii		1 1110116				0011011	Iuca		
Year	Jan.		Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1921	3.35	3.85	2.12	2.97	2.85	4.74	5.15	2.86	1.57	2.25	2.31	1.38	35 .40
1922	2.84	4.06	4.69	3.37	2.59	3.68	4.55	1.64	1.19	3.36	.26	4.93	37.16
1923	2.03	2.06	4.96	2.57	5.71	2.66	4.54	2.75	2.64	.87	1.83	2.72	35.34
1924	3.74	2.79	2.56	3.58	3.07	1.91	5.70	2.24	4.23	1.21	.41	4.03	
1925	2.74	1.85	2.45	2.45	2.15	1.97	.77	.22	1.92	2.74	2.43		22.79
1926	3.39	2.50	3.04	1.68	2.37	1.85	4.48	4.00	.94	1.29	3.51	3.19	32.24
1927	1.16	3.25	2.79	1.61	2.20	4.47	3.85	2.76	1.14	3.43	2.76	6.41	
1928	1.15	.96	3.95	4.53	5.53	4.45	3.78	9.08	4.85	3.77	.89	.55	
1929	1.89	4.56	5.85	2.76	5.16	4.27	3.13	.82	9.32	4.75	2.43	1.40	
1930	1.48	.67	1.66	1.72	2.56	2.96	1.12	1.78	4.23	1.00	2.84	2.45	
1931	1.84	1.24	2.59	4.71	2.20	3 .44	2.09	4.01	1.12	.49	.43	6.49	30.65
1932	3.99	2.81	3.47	3.48	.84	2.83	2.74	1.60	2.21	6.35	3.03	4.84	
1933	1.54	2.90	2.29	2.59	4.23	3.28	3.50	4.34	1.79	1.61	1.19		30.30
1934	1.66	3.04	5.07	2.89	2.29	5.50	4.50	1.59	3.90	3.57	4.53	1.78	
1935	4.68	2.05	3.34	3.68	3.06	2.36	6.22	3.05	3.85	1.93	3.46	1.38	39.06
1936	7.15	3.78	6.42	4.38	1.44	2.58	6.77	3 .40	5.30	3.85	1.15		
1937	6.87	2.73	.74	3.51	2.45	4.13	4.18	5.29	.67	5.89	.64		38.67
1938	2.59	1.04	4.20	1.47	3.29	3.24	4.90	2.67	4.72	.22	4.85	2.22	35.41
1939	3.94	5.72	2.56	2.38	2.78	4.21	3.79	5.14	1.61	.82	.77		35.80
1940	2.13	2.61	2.85	3.26	1.99	3.10	4.03	13.75	.35	1.12	1.36		39.34
1941	1.13	.65	3.18	1.80	1.51	3.67	9.61	2.46	.28	1.35	1.28	3.40	
1942	2.18	3.49	4.69	1.08	4.63	2.07	3.95	3.89	5.39	1.72	.51	5.43	
1943	3.43	2.12	4.00	2.89	3.96	8.28	6.81	2.17	2.05	.59	1.62	1.59	39.51
1944	2.52	6.46	5.30	2.73	2.85	1.97	6.24	2.76	3.42	2.06	1.95	2.27	
1945	1.76	4.22	3.55	4.87	2.87	5.04	3.75	3.82	4.47	2.95	2.96	4.83	45.09
Summa		eriod	1921-1								, ,		
Max.	7.15	6.46	6.42	4.87	5.71	8.28	9.61		9.32	6.35	4.85	6.49	
Min.	1.13	.65	.74	1.08	.84	1.85	.77	.22	.28	.22	.26		22.79
Mean	2.85	2.86	3.53	2.92	2.98	3.55	4.41	3.52	2.93	2.37	1.98	2.99	36.87
Summa		ecord									moran.	1 0	
Max.	7.15	9.60	9.40	6.87	7.75		11.71			11.32		8.77	
Min.	.27	.37	.43	1.08	.71	.91	.77	.22	.28	.02	.07	.55	
Mean	2.86	3.09	3.79	3.09	3.31	3.95	4.61	4.22	2.90	2.66	2.20	3.08	39.86

Average Temperature - Asheville, N. C.

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Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1857								70.0	64.4	~	\$10 MD (see CH)	41.8	
1858	39.1	33.7	42.9	52.2	61.1	69.8			CET (LA CES TOP (M))				
1867					61.7	69.0	72.4	69.8	67.7	53.6	47.6	40.7	Constrain Bills frain con-
1868	33.2	36.3	48.7	52.9	60.7	68.2	73.4	70.6	66.0	55.1	42.2	33.2	53.4
1869	42.1	39.9	43.6	53.4	59.4	67.4	71.2	71.8	62.5	48.6	40.5	37.2	53.1
1870	41.3	38.6	41.7	53.7	62.2	67.8	73.2	71.8	64.0	54.8	44.4	33.8	53.9
1871	38.9	43.8	50.8	58.0	62.1	70.8	70.6	72.4	61.4		46.0	37.4	
1872	33.8	38.2	39.4	56.9	64.2	68.4	73.0	71.1	63.7	53.5	40.3	35.0	53.1
1873	35.0	40.5	42.4		62.7	68.8	71.5	70.8	64.6	50.5	41.7	36.9	53.2
1874	39.7	40.8	52.1	51.2	65.0	71.2	72.8	69.9	66.4	53.5	45.0	41.0	55.7
1875	36.5	34.3	39.8	48.0	62.0	67.3	71.8	68.8	60.8	49.0	48.3	43.2	52.5
1876	42.7	40.5	44.4	58.1	72.3	76.8	72.9	71.9	64.0	52.3	43.1	29.8	55.7
1877	40.1	42.3	44.4	59.8	60.0	69.5	72.7	70.0	64.2	55.2	45.1	42.0	55.4
1878	34.0	39.4	50.9	50.9	61.5	65.5	74.7	72.5	64.7	51.5	42.8	31.0	53.3
1879	35.9	36.1	48.7	51.6	64.0	68.2	74.8	67.6	61.3	59.9	44.5	44.8	54.8
1880	46.4	42.6	47.6										
11884											46.5	41.1	

Average Temperature - Asheville, N. C. Continued -

1888 36.6 33.7 51.0 53.8 66.3 22.9 51.9 M1.0 1.888 39.6 36.3 M5.1 56.1 62.6 67.2 72.9 68.8 63.9 52.3 M5.3 51.2 55.1 1889 37.5 M5.2 M2.2 56.5 61.2 71.8 68.6 70.0 66.0 51.8 M3.3 M3.2 56.5 53.0 51.4 39.2 56.5 58.2 37.5 M5.3 37.5 M5.2 M2.2 56.5 61.2 71.8 68.6 70.0 66.0 51.8 M3.3 M3.7 54.9 54.8 58.8 58.8 58.8 68.0 70.0 66.0 51.8 M3.3 M3.7 54.9 54.8 58.8 58.8 58.8 70.0 66.0 51.8 M3.3 M3.7 54.9 54.8 58.8 58.8 58.8 58.8 58.8 70.0 66.0 51.8 M5.3 M3.7 54.9 54.8 58.	Vonn	Tan	Feb.	Mar.	Apr.	May	June	nued -	Aug.	Sept.	Oct.	Nov.	Dec.	Aronagol
1888 39.6 33.8 35.1 55.1 55.1 55.2 62.8 62.1 71.7 70.8 67.9 65.6 53.0 51.1 39.2 56.5 1890 17.2 19.0 12.2 56.1 62.6 62.1 71.7 70.8 67.9 65.6 53.0 51.1 39.2 56.5 1893 37.5 187.2 187.3 53.5 61.8 70.0 69.9 37.2	Year	Jan.							Aug.					Average
1888 39.6		1		1										
1889 18.0 36.3 36.3 15.1 56.1 62.6 67.2 72.9 68.8 63.9 52.3 15.3 51.2 55.1			ì				i				-			
1899 17.2 19.0 12.6 56.8 62.4 71.7 70.8 67.2 65.6 52.0 51.4 39.2 56.5 1899 37.5 15.2 12.2 56.1 61.2 71.8 68.6 70.0 66.0 57.8 18.3 39.2 58.1 1892 31.0 15.1 19.8 53.8 61.8 70.0 69.9 37.2 37.2 37.8 58.2 18.1 18.2			i	1 1		(0 (1	70.0	(0 0		۲۰ ۰		۲٦ ٥	
1892 31.0 185-1 13.8 53.8 61.8 70.0 66.0 51.8 14.3 13.7 51.9 1892 31.0 185-1 13.8 53.8 61.8 70.0 69.9 37.2 1893 27.2 11.1 14.1 14.2 57.7 66.3 68.0 71.1 70.1 65.1 55.8 15.4 39.9 51.1 1894 42.1 40.0 50.5 53.9 62.8 70.0 71.6 71.3 68.1 56.5 15.0 37.8 55.8 1895 34.2 28.8 45.2 57.2 61.7 69.9 99.2 72.0 70.6 51.2 49.1 38.4 54.0 1896 36.0 37.9 13.7 60.3 68.6 68.6 72.1 71.1 68.4 56.5 51.2 19.1 38.4 54.0 1897 32.9 14.1 50.1 51.2 59.8 70.1 71.8 70.3 67.7 59.0 16.7 38.4 54.0 1890 32.8 37.0 46.1 49.2 61.6 69.1 70.7 70.8 67.1 54.1 41.0 38.6 53.5 1906 32.0 31.0 51.2 54.9 65.5 67.0 70.2 71.2 71.1 66.1 55.2 81.1 13.0 37.4 51.5 1908 32.8 33.0 51.5 28.8 63.8 69.1 70.7 70.2 67.8 55.8 41.1 33.1 51.5 1909 12.1 13.0 14.7 56.2 61.2 71.2 70.0 71.6 61.1 61.1 52.8 41.1 32.9 55.1 1910 36.1 33.8 35.2 58.8 63.8 69.1 77.0 70.0 67.6 57.8 41.1 32.9 51.0 1911 42.0 43.8 45.5 55.0 64.8 67.0 77.0 70.0 67.6 57.8 41.1 32.9 51.0 1911 42.0 43.8 45.5 55.0 64.8 67.0 77.0 70.0 67.6 57.8 41.1 32.9 51.0 1911 42.0 43.8 45.5 55.0 64.8 67.0 77.0 70.0 68.9 57.8 41.1 32.9 51.0 1912 31.1 33.6 45.2 55.9 58.8 63.2 69.1 71.0 71.2 71.8 71.0 59.2 11.8 13.0 55.8 1913 45.3 39.2 47.8 58.9 67.0 72.0 70.0 67.6 57.8 41.1 32.9 51.0 1913 45.3 39.2 47.8 58.9 67.0 72.0 70.0 68.9 57.8 41.1 32.9 51.0 1914 48.3 37.9 48.5 58.9 67.0 72.0 70.0 67.6 57.8 41.1 32.9 51.0 1913 45.3 39.2 47.8 58.4 65.6 67.8 72.0 70.0 67.6 57.8 41.1 32.9 51.0 1914 35.3 36.9 37.7 37.8 56.4														55°±
1892 31.0 185.1 13.8 53.8 61.8 70.0 69.9 37.2 1893 27.2 11.1 11.1 257.7 60.3 68.0 71.1 70.1 65.1 55.8 15.1 39.9 51.1 1891 12.1 180.0 50.5 53.9 62.8 70.0 71.6 71.3 68.1 56.5 15.0 37.8 55.8 1895 31.2 28.8 15.2 57.2 61.7 69.9 69.2 72.0 70.6 53.2 19.1 38.4 55.8 1897 32.9 11.2 50.1 51.2 59.8 70.1 71.3 70.3 67.7 59.0 16.7 10.0 55.3 1897 32.9 11.2 50.1 51.2 59.8 70.1 71.3 70.3 67.7 59.0 16.7 10.0 55.3 1898 10.6 36.8 51.7 19.1														
1899														1
1895 18, 12 28, 8 18, 12 52, 57, 26 61, 76 69, 96, 92, 72, 07, 66 51, 2 19, 14 38, 15, 16, 1896 36, 0 37, 9 43, 7 60, 3 68, 6 68, 6 72, 14 71, 14 66, 6 51, 2 19, 14 38, 15, 16, 1898 10, 6 36, 8 51, 7 19, 1										1				1 1
1895 34.2 28.8 15.2 57.2 61.7 69.9 69.2 72.0 70.6 51.2 19.4 38.4 51.0 1897 32.9 11.2 50.1 51.2 59.8 70.4 71.8 70.5 70.5 61.6 51.2 50.8 38.6 56.0 1898 10.6 36.6 51.7 19.1 1902 1903 36.4 11.3 52.4 52.5 63.8 64.6 72.4 70.5 64.6 51.2 11.4 33.1 51.1 1904 32.8 37.0 16.4 19.2 61.6 69.1 70.7 70.8 67.1 51.4 14.0 33.6 53.5 1905 32.0 31.0 51.2 51.9 65.6 70.6 72.2 70.2 67.8 55.6 16.0 37.4 51.5 1906 10.4 38.0 11.9 56.5 62.0 70.2 71.2 71.1 66.5 52.8 14.2 39.0 55.1 1907 16.6 37.6 51.2 18.0 61.0 67.0 71.0 71.1 66.4 52.8 14.2 39.0 55.1 1908 34.6 33.4 53.2 58.8 63.8 69.1 72.4 71.1 66.6 51.2 19.0 11.3 55.5 1910 36.4 35.9 52.9 58.8 58.9 67.0 72.0 70.6 67.4 52.8 14.2 39.0 55.1 1911 12.0 13.8 15.6 52.0 61.8 71.0 71.2 70.0 71.6 61.4 52.8 14.2 39.0 55.1 1912 31.4 33.6 15.2 55.9 63.2 67.0 72.0 70.6 67.6 57.8 11.8 13.0 56.4 1912 31.4 33.6 15.2 55.0 63.2 67.0 72.0 70.0 68.4 52.8 14.2 39.0 56.4 1912 31.4 33.6 15.2 55.9 63.2 67.0 72.0 70.0 68.4 57.6 13.1 31.8 13.0 56.4 1913 15.3 39.2 17.8 52.8 63.2 69.4 71.0 71.2 71.8 71.0 59.2 11.8 13.0 56.4 1913 35.4 37.0 14.5 52.8 63.2 69.4 71.0 71.8 63.7 57.6 14.1 30.5 56.4 1913 34.5 37.0 14.5 52.8 63.2 69.4 71.0 71.8 63.7 57.6 14.1 30.2 51.7 1914 39.6 36.8 56.4 63.8 67.6 67.6 72.0 70.1 67.4 58.4 14.1 30.2 51.7 1915 37.0 14.2 55.9 55.2 63.8 65.6 67.6 72.0 70.1 67.4 58.4 14.1 30.2 51.7 1914 39.6 36.8 56.4 63.8 67.6 67.6														
1896 36.0 37.9 13.7 60.3 68.6 68.6 72.h 71.h 66.6 51.2 50.8 38.6 56.0 1898 10.6 36.8 51.7 19.1 1902 1903 36.h 11.3 52.h 52.5 53.8 61.6 72.6 72.6 61.6 51.2 51.4 33.1 51.1 1904 32.8 37.0 16.h 19.2 61.6 69.1 70.7 70.8 67.1 51.4 14.0 38.6 53.5 1905 32.0 31.0 51.2 54.9 65.6 70.6 72.2 70.2 67.8 55.6 16.0 37.4 51.5 1906 10.h 38.0 11.9 56.5 62.0 70.2 71.2 71.1 16.7 53.7 16.7 39.8 55.1 1907 16.0 37.6 51.2 18.0 61.0 67.0 71.0 71.1 66.h 51.2 14.0 37.6 55.5 1908 31.6 33.4 53.2 58.8 63.8 69.1 72.h 71.h 66.6 51.2 14.0 11.3 55.5 1909 12.h 13.0 14.7 56.2 61.2 71.2 70.0 71.6 61.h 51.2 19.0 11.3 55.5 1911 12.0 13.8 15.6 52.0 61.8 71.0 71.2 71.8 71.0 59.2 11.8 13.0 56.1 1912 31.h 33.6 15.2 55.9 63.2 67.0 72.0 70.6 67.6 57.8 11.1 32.9 56.1 1913 15.3 39.2 17.8 52.6 63.2 69.4 71.0 71.8 71.0 59.2 11.8 13.0 56.1 1913 15.3 39.2 17.8 52.6 63.8 67.6 72.0 70.6 67.6 57.8 11.1 30.9 56.1 1913 15.3 39.2 17.8 52.6 63.2 69.4 71.0 71.8 71.0 59.2 11.8 13.0 56.1 1914 37.9 11.1 11.5 56.8 56.2 67.0 72.0 70.6 67.6 57.8 11.1 36.2 51.7 1915 37.0 10.2 36.8 56.4 63.8 67.6 72.0 70.0 68.9 57.6 13.1 39.9 51.0 1914 12.2 37.h 14.1 55.0 63.4 73.1 72.3 72.2 65.1 57.8 14.1 36.2 54.7 1915 37.0 10.2 36.8 56.4 63.8 67.6 72.0 70.1 67.4 58.4 14.1 36.2 54.7 1916 11.8 37.9 11.1 55.6 56.6 66.6 67.6 72.0 70.1 67.1 58.4 14.1 36.2 54.7 1917 1928 38.4 37.7 13.8 52.9 66.8 67.6 72.0 70.3 63.8 59.1 14.0 55.7 55.9 55.9 55.0										1				
1898 180-6 36.8 51.7 19.1														
1898 10.6 36.8 51.7 19.1 63.3 56.2 51.9 38.4 1903 36.1 11.3 52.4 52.5 63.8 61.6 72.6 72.6 61.6 51.2 51.9 38.4 51.1 1904 32.8 37.0 16.1 19.2 61.6 69.1 70.7 70.8 67.1 51.2 51.9 38.4 51.1 1905 32.0 31.0 51.2 51.9 65.6 70.6 72.2 70.2 67.5 55.6 16.0 37.4 51.5 1906 10.1 38.0 11.9 56.5 62.0 70.2 71.2 71.1 69.7 53.7 16.7 39.8 55.4 1907 16.0 37.6 51.2 18.0 61.0 67.0 71.0 71.1 66.1 52.8 14.2 39.0 55.1 1908 34.6 33.4 53.2 58.8 63.8 69.1 72.4 71.4 64.1 52.8 14.2 39.0 55.1 1908 34.6 33.4 55.2 58.8 63.8 69.1 72.4 71.4 64.1 52.8 14.2 39.0 55.1 1909 12.4 13.0 14.7 56.2 61.2 71.2 70.0 71.6 61.4 52.8 14.2 39.0 55.5 1909 12.4 13.3 14.5 55.2 59.8 58.9 67.0 72.0 70.6 67.6 57.8 11.4 32.9 51.0 1911 12.0 13.8 15.6 52.0 61.8 71.0 71.2 71.8 71.0 59.2 11.8 13.3 56.4 19.2 31.4 33.6 15.2 55.9 63.2 67.0 72.0 70.0 68.9 57.6 13.1 39.9 51.0 1913 15.3 39.2 17.8 52.8 63.2 69.4 71.0 71.8 67.1 57.6 13.1 39.9 51.0 1913 15.3 39.2 17.8 52.8 63.2 69.4 71.0 71.8 67.1 57.6 13.1 39.9 51.0 1913 15.3 39.2 14.2 55.8 63.2 67.6 72.0 70.4 67.1 57.6 14.1 13.6 55.8 1914 37.0 14.2 37.0														
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1903 36.4 h1.3 52.4 52.5 63.8 61.6 72.6 72.6 61.6 51.2 h1.4 33.1 54.1 1904 32.8 37.0 h6.1 h9.2 61.6 69.1 70.7 70.8 67.1 51.4 h1.0 38.6 53.5 1905 32.0 33.0 51.2 51.9 65.6 70.6 72.2 70.2 67.8 55.6 h6.0 37.4 51.5 1906 h0.1 38.0 h1.9 56.5 62.0 70.2 71.2 71.1 69.7 53.7 h6.7 39.8 55.4 1908 31.6 33.1 53.2 58.8 63.8 69.1 72.1 71.1 69.7 53.7 h6.7 39.8 55.1 1908 31.6 33.1 53.2 58.8 63.8 69.1 72.1 71.1 61.6 51.2 h9.0 h1.3 55.5 1909 h2.1 h3.0 h1.7 56.2 61.2 71.2 70.0 71.6 61.4 52.8 51.0 1910 36.1 35.9 52.9 51.8 58.9 67.0 72.0 70.6 67.6 57.8 h1.4 32.9 55.1 1911 h2.0 h3.8 h5.6 52.0 61.8 71.0 71.2 71.8 71.0 59.2 h1.8 h3.0 56.1 1911 h3.3 h5.6 52.2 55.9 63.2 67.0 72.0 70.0 68.9 57.6 h3.1 39.9 51.0 1913 h5.3 39.2 h7.8 52.8 63.2 69.1 71.0 71.8 63.7 58.5 h1.3 39.9 51.0 1913 h5.3 39.2 h7.8 52.8 63.2 69.1 71.0 71.8 63.7 58.5 h1.3 39.9 51.0 1915 37.0 h0.2 36.8 56.4 63.8 67.6 72.0 70.0 68.9 57.6 h3.1 39.9 51.0 1915 37.0 h0.2 36.8 56.4 63.8 67.6 72.0 70.0 68.9 57.6 h3.1 39.9 51.0 1918 28.8 h1.1 52.7 52.5 65.8 69.6 69.8 72.8 61.3 50.0 h1.2 30.2 53.1 1919 37.6 37.3 h7.5 51.1 66.8 57.0 67.5 72.0 70.3 63.8 50.0 h1.2 30.2 53.1 1921 38.1 h2.2 55.9 55.2 60.5 71.8 73.2 71.1 60.2 65.1 h8.1 h0.3 56.2 1921 38.1 h2.2 55.9 55.2 60.5 71.8 73.2 71.1 60.2 65.1 h8.1 h0.3 56.2 1921 38.1 h2.2 55.9 55.2 60.5 71.8 73.2 70.6 71.5 55.6 h8.5 51.0 1921 38.1 h2.2 55.9 55.2 60.5 71.8 73.2 70.6 71.5 55.6 h8.5 53.8 1922 38.1 35.2 18.6 67.1 63.0 68.6 71.6 70.0 67		40.6	36.8	51.7	49.1									·
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1909							67.0							
1909			33.4					72.4						
1911		42.4						70.0	71.6			51.0	32.7	
1912 31.4 33.6 45.2 55.9 63.2 67.0 72.0 70.0 68.9 57.6 43.1 39.9 51.0 1913 45.3 39.2 17.8 52.8 63.2 69.1 71.0 71.8 63.7 51.5 17.8 40.1 55.8 1914 39.6 36.9 11.0 55.0 63.1 73.1 72.3 72.2 65.1 57.8 44.1 36.2 51.7 1915 37.0 40.2 36.8 56.1 63.8 67.6 72.0 70.1 67.1 58.1 48.5 37.6 51.7 1916 11.8 37.9 11.5 52.8 65.6 67.8 72.2 72.6 63.9 56.3 16.3 38.8 55.3 1917 12.2 37.1 16.1 56.8 57.0 67.5 72.0 70.3 63.8 50.0 11.2 30.2 53.1 1918 28.8 11.1 52.7 52.5 65.8 69.6 68.9 72.8 61.3 59.1 16.2 13.6 55.5 1919 37.6 37.3 17.5 51.1 62.9 70.3 73.2 71.1 66.2 65.1 18.1 10.3 56.2 1920 38.1 35.7 13.8 52.9 60.8 68.6 71.6 70.0 67.2 56.1 14.1 10.3 56.2 1921 39.1 12.2 55.9 55.2 60.5 71.8 73.2 70.6 71.7 51.2 19.8 13.2 57.3 1922 38.2 15.2 18.6 57.1 63.2 71.2 72.8 69.0 67.8 56.6 16.5 14.6 56.7 1923 11.8 38.3 17.0 55.8 60.7 69.8 71.1 72.6 67.6 51.2 14.6 56.5 1924 33.6 35.8 12.1 53.3 58.6 71.1 72.6 67.6 51.2 14.4 10.8 53.8 1925 37.6 14.1 14.1 15.3 58.6 71.4 71.0 73.1 62.2 55.8 17.8 14.6 56.3 1926 37.0 10.5 39.6 52.1 63.0 68.0 72.8 71.2 71.5 57.2 11.1 10.1 51.8 1927 38.8 18.2 17.6 57.2 64.3 68.5 72.2 69.1 68.1 58.2 19.8 38.9 55.7 1928 35.1 39.2 15.8 52.0 60.1 68.0 73.0 73.0 63.5 58.2 14.8 39.9 51.5 1929 38.1 37.8 50.1 57.0 62.2 68.3 71.7 70.8 66.1 53.2 14.0 14.0 14.0 57.1 1931 38.1 11.7 11.1 53.1 61.8 71.8 76.6 72.0 71.0 58.8 53.1 17.1 17.1 57.3 1932 16.7 17.3 12.6 55.3 63.2 72.1 76.1 73.8 66.6 56.2 14.0 14.0 14.0 57.1 1933 15.8 39.3 16.1 55.8 61	1910	36.4	35.9	52.9	54.8	58.9	67.0	72.0	70.6	67.6	57.8	41.4	32.9	
1913 15.3 39.2 17.8 52.8 63.2 69.4 71.0 71.8 63.7 51.5 17.8 10.1 55.8 1911 39.6 36.9 11.0 55.0 63.4 73.1 72.3 72.2 65.1 57.8 11.1 36.2 51.7 1915 37.0 10.2 36.8 56.4 63.8 67.6 72.0 70.4 67.4 58.4 18.5 37.6 51.7 1916 11.8 37.9 11.5 52.8 65.6 67.8 72.2 72.6 63.9 56.3 16.3 38.8 55.3 1917 12.2 37.4 16.1 56.8 57.0 67.5 72.0 70.3 63.8 50.0 11.2 30.2 53.1 1918 28.8 11.4 52.7 52.5 65.8 69.6 68.9 72.8 61.3 59.1 16.2 13.6 55.5 1919 37.6 37.3 17.5 51.4 62.9 70.3 73.2 71.1 66.2 65.1 18.4 10.3 56.2 1920 38.4 35.7 13.8 52.9 60.8 68.6 71.6 70.0 67.2 56.4 11.2 38.8 51.0 1921 39.1 12.2 55.9 55.2 60.5 71.8 73.2 70.6 71.7 51.2 19.8 13.2 57.3 1922 38.2 15.2 18.6 57.1 63.2 71.2 72.8 69.0 67.8 56.6 16.5 11.6 56.7 1923 11.8 38.3 17.0 53.8 60.7 69.8 71.4 72.6 67.6 51.2 11.3 16.2 55.6 1921 33.6 35.8 12.1 53.3 58.6 71.4 71.0 73.4 62.2 55.8 11.8 10.8 53.8 1925 37.6 11.9 14.2 58.8 59.7 72.8 71.5 72.0 73.6 53.6 13.6 36.6 56.3 1925 37.6 11.9 14.2 57.2 61.3 68.5 72.2 69.1 68.1 58.2 19.8 38.9 56.7 1928 35.1 39.2 15.8 57.0 60.4 68.0 73.0 73.0 63.5 58.2 16.8 39.0 51.5 1929 38.4 37.8 50.4 57.0 62.2 68.3 71.7 70.8 66.4 58.2 19.8 38.9 56.7 1933 14.1 7.1 11.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 14.0 14.0 57.4 1933 14.8 39.3 16.6 55.3 63.2 72.6 76.4 73.8 66.6 56.2 14.0 14.0 57.4 1933 14.0 57.4 57.3 63.2 72.6 76.6 73.8 69.0 52.8 14.0 14.0 57.4 1933 14.0 54.2 55.8 61.2 72.6 76.6 73.8 69.0 52.8 14.0 14.0 57.4 1933 14.0 54.2 55.8 66.5 66.5 72.1 75.6 71.8 70.2 58.5 14.0 14.0 5	1911	42.0	43.8	45.6			71.0	71.2	71.8	71.0	59.2	41.8	43.0	56.4
1913 15.3 39.2 17.8 52.8 63.2 69.4 71.0 71.8 63.7 51.5 17.8 10.1 55.8 1911 39.6 36.9 11.0 55.0 63.4 73.1 72.3 72.2 65.1 57.8 11.1 36.2 51.7 1915 37.0 10.2 36.8 56.4 63.8 67.6 72.0 70.4 67.4 58.4 18.5 37.6 51.7 1916 11.8 37.9 11.5 52.8 65.6 67.8 72.2 72.6 63.9 56.3 16.3 38.8 55.3 1917 12.2 37.4 16.1 56.8 57.0 67.5 72.0 70.3 63.8 50.0 11.2 30.2 53.1 1918 28.8 11.4 52.7 52.5 65.8 69.6 68.9 72.8 61.3 59.1 16.2 13.6 55.5 1919 37.6 37.3 17.5 51.4 62.9 70.3 73.2 71.1 66.2 65.1 18.4 10.3 56.2 1920 38.4 35.7 13.8 52.9 60.8 68.6 71.6 70.0 67.2 56.4 11.2 38.8 51.0 1921 39.1 12.2 55.9 55.2 60.5 71.8 73.2 70.6 71.7 51.2 19.8 13.2 57.3 1922 38.2 15.2 18.6 57.1 63.2 71.2 72.8 69.0 67.8 56.6 16.5 11.6 56.7 1923 11.8 38.3 17.0 53.8 60.7 69.8 71.4 72.6 67.6 51.2 11.3 16.2 55.6 1921 33.6 35.8 12.1 53.3 58.6 71.4 71.0 73.4 62.2 55.8 11.8 10.8 53.8 1925 37.6 11.9 14.2 58.8 59.7 72.8 71.5 72.0 73.6 53.6 13.6 36.6 56.3 1925 37.6 11.9 14.2 57.2 61.3 68.5 72.2 69.1 68.1 58.2 19.8 38.9 56.7 1928 35.1 39.2 15.8 57.0 60.4 68.0 73.0 73.0 63.5 58.2 16.8 39.0 51.5 1929 38.4 37.8 50.4 57.0 62.2 68.3 71.7 70.8 66.4 58.2 19.8 38.9 56.7 1933 14.1 7.1 11.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 14.0 14.0 57.4 1933 14.8 39.3 16.6 55.3 63.2 72.6 76.4 73.8 66.6 56.2 14.0 14.0 57.4 1933 14.0 57.4 57.3 63.2 72.6 76.6 73.8 69.0 52.8 14.0 14.0 57.4 1933 14.0 54.2 55.8 61.2 72.6 76.6 73.8 69.0 52.8 14.0 14.0 57.4 1933 14.0 54.2 55.8 66.5 66.5 72.1 75.6 71.8 70.2 58.5 14.0 14.0 5	1912		33.6	45.2	55.9	63.2	67.0	72.0	70.0	68.9	57.6	43.1	39.9	
1915 37.0 140.2 36.8 56.4 63.8 67.6 72.0 70.4 67.4 58.4 148.5 37.6 514.7 1916 141.8 37.9 141.5 52.8 65.6 67.8 72.2 72.6 63.9 56.3 16.3 38.8 55.3 1917 142.2 37.4 146.1 56.8 57.0 67.5 72.0 70.3 63.8 50.0 141.2 30.2 53.1 1918 28.8 141.4 52.7 52.5 65.8 69.6 68.9 72.8 61.3 59.1 146.2 143.6 55.5 1919 37.6 37.3 147.5 54.4 62.9 70.3 73.2 71.1 66.2 65.1 148.4 140.3 56.2 1920 38.4 35.7 143.8 52.9 60.8 68.6 71.6 70.0 67.2 56.4 144.2 38.8 54.0 1921 39.1 12.2 55.9 55.2 60.5 71.8 73.2 70.6 71.7 54.2 149.8 143.2 57.3 1922 38.2 145.2 148.6 57.1 63.2 71.2 72.8 69.0 67.8 56.6 146.5 144.6 56.7 1923 141.8 38.3 147.0 53.8 60.7 69.8 71.4 72.6 67.6 54.2 141.3 146.2 55.6 1924 33.6 35.8 12.1 53.3 58.6 71.4 71.0 73.4 62.2 55.8 147.8 140.8 53.8 1925 37.6 144.9 148.2 58.4 59.7 72.8 74.5 72.0 73.6 53.6 143.6 36.6 56.3 1926 37.0 10.5 39.6 52.1 63.0 68.0 72.8 74.2 71.5 57.2 14.4 14.0 14.5 1927 38.8 148.2 147.6 57.2 64.3 68.5 72.2 69.1 68.1 58.2 149.8 38.9 56.7 1928 35.4 37.2 15.8 52.0 60.4 68.0 73.0 73.0 63.5 58.2 146.8 39.0 54.5 1930 39.8 14.2 13.0 56.2 63.8 68.0 74.5 70.4 66.0 52.8 141.1 34.2 55.0 1931 38.1 14.7 14.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 147.4 57.3 1932 146.7 147.3 12.6 55.3 63.2 72.1 76.4 73.8 66.6 56.2 144.0 144.0 145.2 55.0 1931 38.1 14.7 14.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 147.4 57.3 1933 145.8 39.3 166.4 54.8 67.8 72.3 73.4 72.2 71.8 57.5 148.6 37.2 56.2 1935 140.2 140.4 54.2 54.5 56.5 63.2 72.4 75.6 74.8 77.5 58.5 144.9	1913	45.3	39.2	47.8	52.8	63.2	69.4	74.0	71.8	63.7	54.5	47.8	40.4	55.8
1916	1914	39.6	36.9	41.0	55.0	63.4	73.1	72.3	72.2	65.1	57.8	44.1	36.2	
1917	1915	37.0	40.2	36.8	56.4	63.8	67.6	72.0	70.4	67.4		48.5	37.6	
1918 28.8 44.4 52.7 52.5 65.8 69.6 68.9 72.8 61.3 59.1 46.2 43.6 55.5 1919 37.6 37.3 47.5 51.4 62.9 70.3 73.2 71.1 66.2 65.1 48.4 40.3 56.2 1920 38.4 35.7 43.8 52.9 60.8 68.6 71.6 70.0 67.2 56.4 44.2 38.8 54.0 1921 39.1 42.2 55.9 55.2 60.5 71.8 73.2 70.6 71.7 54.2 49.8 43.2 57.3 1922 38.2 45.2 48.6 57.1 63.2 71.2 72.8 69.0 67.8 56.6 46.5 44.0 56.7 1923 41.8 38.3 47.0 53.8 60.7 69.8 71.4 72.6 67.6 54.2 44.3 46.2 55.6 1924 33.6 35.8 42.1 53.3 58.6 71.4 71.0 73.4 62.2 55.8 47.8 40.8 53.8 1925 37.6 44.9 48.2 58.4 59.7 72.8 74.5 72.0 73.6 53.6 43.6 36.6 56.3 1926 37.0 40.5 39.6 52.1 63.0 68.0 72.2 69.1 68.1 58.2 49.8 38.9 56.7 1928 35.4 39.2 45.8 52.0 60.4 68.0 73.0 73.0 63.5 58.2 46.6 38.8 55.1 1929 38.4 47.8 50.4 57.0 62.2 68.3 71.7 70.8 66.4 53.2 44.3 47.4 57.3 1931 38.1 41.7 41.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 47.4 57.3 1932 46.7 47.3 42.6 55.3 63.2 72.1 76.4 73.8 66.6 56.2 44.1 34.2 55.0 1931 38.1 41.7 41.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 47.4 57.3 1932 46.6 34.4 44.9 55.2 64.2 72.6 76.6 73.8 69.4 57.5 48.6 37.2 56.3 1933 45.8 39.3 46.4 54.8 67.8 72.3 73.4 72.2 71.8 57.0 45.6 63.5 63.2 72.1 76.4 73.8 66.6 56.2 44.0 44.0 57.8 1934 40.6 34.4 44.9 55.2 64.2 72.6 76.6 73.8 69.4 57.5 48.6 30.7 56.3 1935 40.2 40.4 52.4 54.7 63.9 69.8 74.4 74.0 68.0 57.8 49.6 30.7 56.3 1937 49.6 38.0 44.4 49.1 54.2 64.3 72.6 73.3 74.4 65.8 52.4 43.6 54.5 1937 49.6 38.0 44.4 49.1 54.2 64.3 72.6 73.3 74.4 65.8 52.4 43.0	1916	44.8	37.9	44.5	52.8	65.6	67.8	72.2	72.6	63.9		46.3	38.8	55.3
1919	1917	42.2	37.4	46.1	56.8	57.0	67.5		70.3	63.8	50.0	44.2	30.2	
1919	1918	28.8	44.4	52.7	52.5	65.8	69.6	68.9	72.8	61.3	59.1	46.2	43.6	55.5
1920 38.4 35.7 43.8 52.9 60.8 68.6 71.6 70.0 67.2 56.4 144.2 38.8 54.0 1921 39.1 142.2 55.9 55.2 60.5 71.8 73.2 70.6 71.7 54.2 149.8 143.2 57.3 1922 38.2 45.2 148.6 57.1 63.2 71.2 72.8 69.0 67.8 56.6 146.5 144.6 56.7 1923 141.8 38.3 147.0 53.8 60.7 69.8 71.4 72.6 67.6 54.2 144.3 146.2 55.6 1924 33.6 35.8 142.1 53.3 58.6 71.4 71.0 73.4 62.2 55.8 147.8 140.8 53.8 1925 37.6 144.9 148.2 58.4 59.7 72.8 71.5 72.0 73.6 53.6 143.6 36.6 56.3 1926 37.0 10.5 39.6 52.1 63.0 68.0 72.8 71.2 71.5 57.2 11.4 10.4 54.8 1927 38.8 148.2 147.6 57.2 64.3 68.5 72.2 69.1 68.1 58.2 149.8 38.9 56.7 1928 35.4 39.2 145.8 52.0 60.4 68.0 73.0 73.0 63.5 58.2 149.8 38.9 55.1 1929 38.4 37.8 50.4 57.0 62.2 68.3 71.7 70.8 66.4 53.2 146.8 39.0 54.5 1931 38.1 14.7 141.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 147.4 57.3 1932 146.7 147.3 12.6 55.3 63.2 72.1 76.4 73.8 66.6 56.2 144.0 144.0 57.4 1933 15.8 39.3 146.4 54.8 67.8 72.3 73.4 72.2 71.8 57.0 145.6 166.8 57.8 1931 13.4 14.6 34.4 14.9 55.2 64.2 72.6 76.6 73.8 69.4 57.5 148.6 30.7 56.3 1933 38.2 14.8 52.4 54.7 63.9 69.8 74.4 74.0 68.0 57.8 149.6 30.7 56.3 1933 38.2 14.8 52.1 55.8 64.2 69.6 73.8 75.1 67.4 57.2 148.8 39.4 57.2 1933 38.2 14.8 52.1 55.8 64.2 69.6 73.8 75.1 67.4 57.2 148.8 39.4 55.9 1933 38.2 14.8 52.1 55.8 64.2 69.6 73.8 75.1 67.4 57.2 148.8 39.4 55.9 1933 38.2 14.8 52.1 55.8 64.2 69.6 73.8 75.1 67.4 57.2 148.8 39.4 57.2 1939 140.2 141.4 141.1 54.1 61.9 74.6 74.6 74.8 75.2 146.4 140.0 140.0 57	1919	37.6	37.3	47.5	54.4	62.9	70.3		71.1	66.2	65.1	48.4	40.3	
1922 38.2 45.2 48.6 57.1 63.2 71.2 72.8 69.0 67.8 56.6 46.5 44.6 56.7 1923 41.8 38.3 47.0 53.8 60.7 69.8 71.4 72.6 67.6 54.2 44.3 46.2 55.6 1924 33.6 35.8 42.1 53.3 58.6 71.4 71.0 73.4 62.2 55.8 47.8 40.8 53.8 1925 37.6 44.9 48.2 58.4 59.7 72.8 74.5 72.0 73.6 53.6 43.6 36.6 56.3 1926 37.0 40.5 39.6 52.1 63.0 68.0 72.8 74.2 71.5 57.2 41.4 40.4 54.8 1927 38.8 48.2 47.6 57.2 64.3 68.5 72.2 69.1 68.1 58.2 49.8 38.9 56.7 1928 35.4 39.2 45.8 52.0 60.4 68.0 73.0 73.0 63.5 58.2 46.8 39.0 54.5 1929 38.4 37.8 50.4 57.0 62.2 68.3 71.7 70.8 66.4 53.2 46.6 38.8 55.1 1930 39.8 44.2 43.0 56.2 63.8 68.0 74.5 70.4 69.0 52.8 44.1 34.2 55.0 1931 38.1 41.7 41.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 47.4 57.3 1932 46.7 47.3 42.6 55.3 63.2 72.1 76.4 73.8 66.6 56.2 44.0 44.0 57.4 1933 45.8 39.3 46.4 54.8 67.8 72.3 73.4 72.2 71.8 57.0 45.6 46.8 57.8 1934 40.6 34.4 44.9 55.2 64.2 72.6 76.6 73.8 69.4 57.5 48.6 37.2 56.2 1935 40.2 40.4 54.2 64.3 72.6 76.6 73.8 69.4 57.5 48.6 37.2 56.3 1936 33.4 36.6 49.0 53.3 66.5 72.4 75.6 74.8 70.2 58.5 44.9 42.4 56.5 1937 49.6 38.0 44.4 54.2 64.3 72.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1938 38.2 44.8 52.4 55.8 64.2 69.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1939 40.2 44.4 49.1 54.1 63.9 74.6 74.3 73.0 69.9 59.6 44.6 40.0 57.3 1940 26.4 38.8 43.4 53.7 62.2 71.6 72.8 72.3 65.2 57.2 46.4 43.6 54.5 1941 38.8 33.8 40.7 58.4 65.6 71.8 74.8 75.1 70.4 63.0 46.9 42.7 56.8 1942 37.4 33.5 47.2 58.5 63.9 73.0 74	1920	38.4	35.7	43.8	52.9	60.8	68.6	71.6	70.0	67.2	56.4	44.2	38.8	54.0
1922 38.2 45.2 48.6 57.1 63.2 71.2 72.8 69.0 67.8 56.6 46.5 44.6 56.7 1923 41.8 38.3 47.0 53.8 60.7 69.8 71.4 72.6 67.6 54.2 44.3 46.2 55.6 1924 33.6 35.8 42.1 53.3 58.6 71.4 71.0 73.4 62.2 55.8 47.8 40.8 53.8 1925 37.6 44.9 48.2 58.4 59.7 72.8 74.5 72.0 73.6 53.6 43.6 36.6 56.3 1926 37.0 40.5 39.6 52.1 63.0 68.0 72.8 74.2 71.5 57.2 41.4 40.4 54.8 1927 38.8 48.2 47.6 57.2 64.3 68.5 72.2 69.1 68.1 58.2 49.8 38.9 56.7 1928 35.4 39.2 45.8 52.0 60.4 68.0 73.0 73.0 63.5 58.2 46.8 39.0 54.5 1929 38.4 37.8 50.4 57.0 62.2 68.3 71.7 70.8 66.4 53.2 46.6 38.8 55.1 1930 39.8 44.2 43.0 56.2 63.8 68.0 74.5 70.4 69.0 52.8 44.1 34.2 55.0 1931 38.1 41.7 41.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 47.4 57.3 1932 46.7 47.3 42.6 55.3 63.2 72.1 76.4 73.8 66.6 56.2 44.0 44.0 57.4 1931 40.6 34.4 44.9 55.2 64.2 72.6 76.6 73.8 69.4 57.5 48.6 37.2 56.3 1936 33.4 36.6 49.0 53.3 66.5 72.4 75.6 74.8 70.2 58.5 44.9 42.4 56.5 1937 49.6 38.0 44.4 54.2 64.3 72.6 73.3 74.4 65.8 52.4 43.2 38.4 55.9 1938 38.2 44.8 52.4 55.8 64.2 69.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1939 40.2 40.4 49.1 54.2 64.3 72.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1938 38.2 44.8 52.4 55.8 64.2 69.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1939 40.2 44.4 49.1 54.1 63.9 74.6 74.3 73.0 69.9 59.6 44.6 40.0 57.3 1940 26.4 38.8 43.4 53.7 62.2 71.6 74.8 75.1 70.4 63.0 46.9 42.7 56.8 1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 48.0 38.5 55.9	1921	39.1	42.2		55.2			73.2	70.6	71.7	54.2	49.8	43.2	57.3
1923		38.2	45.2									46.5	44.6	56.7
1924 33.6 35.8 42.1 53.3 58.6 71.4 71.0 73.4 62.2 55.8 47.8 40.8 53.8 1925 37.6 44.9 48.2 58.4 59.7 72.8 74.5 72.0 73.6 53.6 43.6 36.6 56.3 1926 37.0 40.5 39.6 52.1 63.0 68.0 72.8 74.2 71.5 57.2 41.4 40.4 54.8 1927 38.8 48.2 47.6 57.2 64.3 68.5 72.2 69.1 68.1 58.2 49.8 38.9 56.7 1928 35.4 39.2 45.8 52.0 60.4 68.0 73.0 73.0 63.5 58.2 46.8 39.0 54.5 1929 38.4 37.8 50.4 57.0 62.2 68.3 71.7 70.8 66.4 53.2 46.6 38.8 55.1 1930 39.8 44.2 43.0 56.2 63.8 68.0 74.5 70.4 69.0 52.8 44.1 34.2 55.0 1931 38.1 41.7 41.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 47.4 57.3 1932 46.7 47.3 42.6 55.3 63.2 72.1 76.4 73.8 66.6 56.2 44.0 44.0 57.4 1933 45.8 39.3 46.4 54.8 67.8 72.3 73.4 72.2 71.8 57.0 45.6 46.8 57.8 1934 40.6 34.4 44.9 55.2 64.2 72.6 76.6 73.8 69.4 57.5 48.6 37.2 56.2 1935 40.2 40.4 52.4 54.7 63.9 69.8 74.4 74.0 68.0 57.8 49.6 30.7 56.3 1936 33.4 36.6 49.0 53.3 66.5 72.4 73.6 73.8 75.1 67.4 57.2 48.8 39.4 55.9 1938 38.2 44.8 52.4 54.2 64.3 72.6 73.8 75.1 67.4 57.2 48.8 39.4 55.9 1938 38.2 44.8 52.4 55.8 64.2 69.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1939 40.2 44.4 49.1 54.1 63.9 74.6 74.3 73.0 69.9 59.6 44.6 40.0 57.3 1940 26.4 38.8 43.4 53.7 62.2 71.6 72.8 72.3 65.2 57.2 46.4 43.6 54.5 1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 48.0 38.5 55.9	1923							71.4	72.6	67.6	54.2	44.3	46.2	
1925 37.6 44.9 48.2 58.4 59.7 72.8 74.5 72.0 73.6 53.6 43.6 36.6 56.3 1926 37.0 40.5 39.6 52.1 63.0 68.0 72.8 74.2 71.5 57.2 41.4 40.4 54.8 1927 38.8 48.2 47.6 57.2 64.3 68.5 72.2 69.1 68.1 58.2 49.8 38.9 56.7 1928 35.4 39.2 45.8 52.0 60.4 68.0 73.0 73.0 63.5 58.2 46.8 39.0 54.5 1929 38.4 37.8 50.4 57.0 62.2 68.3 71.7 70.8 66.4 53.2 46.6 38.8 55.1 1930 39.8 44.2 43.0 56.2 63.8 68.0 74.5 70.4 69.0 52.8 44.1 34.2 55.0 1931 38.1 41.7 41.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 47.4 57.3 1932 46.7 47.3 42.6 55.3 63.2 72.1 76.4 73.8 66.6 56.2 44.0 44.0 57.4 1933 45.8 39.3 46.4 54.8 67.8 72.3 73.4 72.2 71.8 57.0 45.6 46.8 57.8 1934 40.6 34.4 44.9 55.2 64.2 72.6 76.6 73.8 69.4 57.5 48.6 30.7 56.2 1935 40.2 40.4 52.4 54.7 63.9 69.8 74.4 74.0 68.0 57.8 49.6 30.7 56.3 1936 33.4 36.6 49.0 53.3 66.5 72.4 75.6 74.8 70.2 58.5 44.9 42.4 56.5 1938 38.2 44.8 52.4 54.7 63.9 69.6 73.8 75.1 67.4 57.2 48.8 39.4 55.9 1938 38.2 44.4 49.1 54.2 64.3 72.6 73.3 74.4 65.8 52.4 43.2 38.4 55.9 1938 38.2 44.4 49.1 54.1 63.9 74.6 74.3 73.0 69.9 59.6 44.6 40.0 57.3 1940 26.4 38.8 43.4 53.7 62.2 71.6 72.8 72.3 65.2 57.2 46.4 43.6 54.5 1941 38.8 33.8 40.7 58.4 65.6 71.8 74.8 75.1 70.4 63.0 46.9 42.7 56.8 1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 48.0 38.5 55.9														
1926 37.0 40.5 39.6 52.1 63.0 68.0 72.8 74.2 71.5 57.2 41.4 40.4 54.8 1927 38.8 48.2 47.6 57.2 64.3 68.5 72.2 69.1 68.1 58.2 49.8 38.9 56.7 1928 35.4 39.2 45.8 52.0 60.4 68.0 73.0 73.0 63.5 58.2 46.8 39.0 54.5 1929 38.4 37.8 50.4 57.0 62.2 68.3 71.7 70.8 66.4 53.2 46.6 38.8 55.1 1930 39.8 44.2 43.0 56.2 63.8 68.0 74.5 70.4 69.0 52.8 44.1 34.2 55.0 1931 38.1 41.7 41.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 47.4 57.3 1932 46.7 47.3 42.6 55.3 63.2 72.1 76.4 73.8 66.6 56.2 44.0 44.0 57.4 1933 45.8 39.3 46.4 54.8 67.8 72.3 73.4 72.2 71.8 57.0 45.6 46.8 57.8 1934 40.6 34.4 44.9 55.2 64.2 72.6 76.6 73.8 69.4 57.5 48.6 37.2 56.2 1935 40.2 40.4 52.4 54.7 63.9 69.8 74.4 74.0 68.0 57.8 49.6 30.7 56.3 1938 38.2 44.8 52.4 54.2 64.3 72.6 73.3 74.4 65.8 52.4 43.2 38.4 55.9 1938 38.2 44.8 52.4 55.8 64.2 69.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1940 26.4 38.8 43.4 53.7 62.2 71.6 72.8 72.3 65.2 57.2 46.4 43.6 54.5 1941 38.8 33.8 40.7 58.4 65.6 71.8 74.8 75.1 70.4 63.0 46.9 42.7 56.8 1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 48.0 38.5 55.9								74.5			53.6		36.6	56.3
1927 38.8 48.2 47.6 57.2 64.3 68.5 72.2 69.1 68.1 58.2 49.8 38.9 56.7 1928 35.4 39.2 45.8 52.0 60.4 68.0 73.0 73.0 63.5 58.2 46.8 39.0 54.5 1929 38.4 37.8 50.4 57.0 62.2 68.3 71.7 70.8 66.4 53.2 46.6 38.8 55.1 1930 39.8 44.2 43.0 56.2 63.8 68.0 74.5 70.4 69.0 52.8 44.1 34.2 55.0 1931 38.1 41.7 41.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 47.4 57.3 1932 46.7 47.3 42.6 55.3 63.2 72.1 76.4 73.8 66.6 56.2 44.0 44.0 57.4 1933 45.8 39.3 46.4 54.8 67.8 72.3 73.4 72.2 71.8 57.0 45.6 46.8 57.8 1934 40.6 34.4 44.9 55.2 64.2 72.6 76.6 73.8 69.4 57.5 48.6 37.2 56.2 1935 40.2 40.4 52.4 54.7 63.9 69.8 74.4 74.0 68.0 57.8 49.6 30.7 56.3 1936 33.4 36.6 49.0 53.3 66.5 72.4 75.6 74.8 70.2 58.5 44.9 42.4 56.5 1937 49.6 38.0 44.4 54.2 64.3 72.6 73.3 74.4 65.8 52.4 43.2 38.4 55.9 1938 38.2 44.8 52.4 55.8 64.2 69.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1939 40.2 44.4 49.1 54.1 63.9 74.6 74.3 73.0 69.9 59.6 44.6 40.0 57.3 1940 26.4 38.8 43.4 53.7 62.2 71.6 72.8 72.3 65.2 57.2 46.4 43.6 54.5 1941 38.8 33.8 40.7 58.4 65.6 71.8 74.8 75.1 70.4 63.0 46.9 42.7 56.8 1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 48.0 38.5 55.9	1926													
1928 35.4 39.2 45.8 52.0 60.4 68.0 73.0 73.0 63.5 58.2 46.8 39.0 54.5 1929 38.4 37.8 50.4 57.0 62.2 68.3 71.7 70.8 66.4 53.2 46.6 38.8 55.1 1930 39.8 44.2 43.0 56.2 63.8 68.0 74.5 70.4 69.0 52.8 44.1 34.2 55.0 1931 38.1 41.7 41.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 47.4 57.3 1932 46.7 47.3 42.6 55.3 63.2 72.1 76.4 73.8 66.6 56.2 44.0 44.0 57.4 1933 45.8 39.3 46.4 54.8 67.8 72.3 73.4 72.2 71.8 57.0 45.6 46.8 57.8 1934 40.6 34.4 44.9 55.2 64.2 72.6 76.6 73.8 69.4 57.5 48.6 37.2 56.2 1935 40.2 40.4 52.4 54.7 63.9 69.8 74.4 74.0 68.0 57.8 49.6 30.7 56.3 1936 33.4 36.6 49.0 53.3 66.5 72.4 75.6 74.8 70.2 58.5 44.9 42.4 56.5 1937 49.6 38.0 44.4 54.2 64.3 72.6 73.3 74.4 65.8 52.4 43.2 38.4 55.9 1938 38.2 44.8 52.4 55.8 64.2 69.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1939 40.2 44.4 49.1 54.1 63.9 74.6 74.3 73.0 69.9 59.6 44.6 40.0 57.3 1940 26.4 38.8 43.4 53.7 62.2 71.6 72.8 72.3 65.2 57.2 46.4 43.6 54.5 1941 38.8 33.8 40.7 58.4 65.6 71.8 74.8 75.1 70.4 63.0 46.9 42.7 56.8 1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 48.0 38.5 55.9						l .								
1929 38.4 37.8 50.4 57.0 62.2 68.3 71.7 70.8 66.4 53.2 46.6 38.8 55.1 1930 39.8 44.2 43.0 56.2 63.8 68.0 74.5 70.4 69.0 52.8 44.1 34.2 55.0 1931 38.1 41.7 41.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 47.4 57.3 1932 46.7 47.3 42.6 55.3 63.2 72.1 76.4 73.8 66.6 56.2 44.0 44.0 57.4 1933 45.8 39.3 46.4 54.8 67.8 72.3 73.4 72.2 71.8 57.0 45.6 46.8 57.8 1934 40.6 34.4 44.9 55.2 64.2 72.6 76.6 73.8 69.4 57.5 48.6 37.2 56.2 1935 40.2 40.4 52.4 54.7 63.9 69.8 74.4 74.0 68.0 57.8 49.6 30.7 56.3 1936 33.4 36.6 49.0 53.3 66.5 72.4 75.6 74.8 70.2 58.5 44.9 42.4 56.5 1937 49.6 38.0 44.4 54.2 64.3 72.6 73.3 74.4 65.8 52.4 43.2 38.4 55.9 1938 38.2 44.8 52.4 55.8 64.2 69.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1939 40.2 44.4 49.1 54.1 63.9 74.6 74.3 73.0 69.9 59.6 44.6 40.0 57.3 1940 26.4 38.8 43.4 53.7 62.2 71.6 72.8 72.3 65.2 57.2 46.4 43.6 54.5 1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 48.0 38.5 55.9														54.5
1930 39.8 44.2 43.0 56.2 63.8 68.0 74.5 70.4 69.0 52.8 44.1 34.2 55.0 1931 38.1 41.7 41.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 47.4 57.3 1932 46.7 47.3 42.6 55.3 63.2 72.1 76.4 73.8 66.6 56.2 44.0 44.0 57.4 1933 45.8 39.3 46.4 54.8 67.8 72.3 73.4 72.2 71.8 57.0 45.6 46.8 57.8 1934 40.6 34.4 44.9 55.2 64.2 72.6 76.6 73.8 69.4 57.5 48.6 37.2 56.2 1935 40.2 40.4 52.4 54.7 63.9 69.8 74.4 74.0 68.0 57.8 49.6 30.7 56.3 1936 33.4 36.6 49.0 53.3 66.5 72.4 75.6 74.8 70.2 58.5 44.9 42.4 56.5 1937 49.6 38.0 44.4 54.2 64.3 72.6 73.3 74.4 65.8 52.4 43.2 38.4 55.9 1938 38.2 44.8 52.4 55.8 64.2 69.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1939 40.2 44.4 49.1 54.1 63.9 74.6 74.3 73.0 69.9 59.6 44.6 40.0 57.3 1940 26.4 38.8 43.4 53.7 62.2 71.6 72.8 72.3 65.2 57.2 46.4 43.6 54.5 1941 38.8 33.8 40.7 58.4 65.6 71.8 74.8 75.1 70.4 63.0 46.9 42.7 56.8 1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 48.0 38.5 55.9														55.1
1931 38.1 41.7 41.1 53.4 61.8 71.8 76.6 72.0 71.0 58.8 53.4 47.4 57.3 1932 46.7 47.3 42.6 55.3 63.2 72.1 76.4 73.8 66.6 56.2 44.0 44.0 57.4 1933 45.8 39.3 46.4 54.8 67.8 72.3 73.4 72.2 71.8 57.0 45.6 46.8 57.8 1934 40.6 34.4 44.9 55.2 64.2 72.6 76.6 73.8 69.4 57.5 48.6 37.2 56.2 1935 40.2 40.4 52.4 54.7 63.9 69.8 74.4 74.0 68.0 57.8 49.6 30.7 56.3 1936 33.4 36.6 49.0 53.3 66.5 72.4 75.6 74.8 70.2 58.5 44.9 42.4 56.5 1937 49.6 38.0 44.4 54.2 64.3 72.6 73.3 74.4 65.8 52.4 43.2 38.4 55.9 1938 38.2 44.8 52.4 55.8 64.2 69.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1939 40.2 44.4 49.1 54.1 63.9 74.6 74.3 73.0 69.9 59.6 44.6 40.0 57.3 1940 26.4 38.8 43.4 53.7 62.2 71.6 72.8 72.3 65.2 57.2 46.4 43.6 54.5 1941 38.8 33.8 40.7 58.4 65.6 71.8 74.8 75.1 70.4 63.0 46.9 42.7 56.8 1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 48.0 38.5 55.9							68.0							
1932												53.4		
1933 45.8 39.3 46.4 54.8 67.8 72.3 73.4 72.2 71.8 57.0 45.6 46.8 57.8 1934 40.6 34.4 44.9 55.2 64.2 72.6 76.6 73.8 69.4 57.5 48.6 37.2 56.2 1935 40.2 40.4 52.4 54.7 63.9 69.8 74.4 74.0 68.0 57.8 49.6 30.7 56.3 1936 33.4 36.6 49.0 53.3 66.5 72.4 75.6 74.8 70.2 58.5 44.9 42.4 56.5 1937 49.6 38.0 44.4 54.2 64.3 72.6 73.3 74.4 65.8 52.4 43.2 38.4 55.9 1938 38.2 44.8 52.4 55.8 64.2 69.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1939 40.2 44.4 49.1 54.1 63.9 74.6 74.3 73.0 69.9 59.6 44.6 40.0 57.3 1940 26.4 38.8 43.4 53.7 62.2 71.6 72.8 72.3 65.2 57.2 46.4 43.6 54.5 1941 38.8 33.8 40.7 58.4 65.6 71.8 74.8 75.1 70.4 63.0 46.9 42.7 56.8 1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 48.0 38.5 55.9														
1934 40.6 34.4 44.9 55.2 64.2 72.6 76.6 73.8 69.4 57.5 48.6 37.2 56.2 1935 40.2 40.4 52.4 54.7 63.9 69.8 74.4 74.0 68.0 57.8 49.6 30.7 56.3 1936 33.4 36.6 49.0 53.3 66.5 72.4 75.6 74.8 70.2 58.5 44.9 42.4 56.5 1937 49.6 38.0 44.4 54.2 64.3 72.6 73.3 74.4 65.8 52.4 43.2 38.4 55.9 1938 38.2 44.8 52.4 55.8 64.2 69.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1939 40.2 44.4 49.1 54.1 63.9 74.6 74.3 73.0 69.9 59.6 44.6 40.0 57.3 1940 26.4 38.8 43.4 53.7 62.2 71.6 72.8 72.3 65.2 57.2 4				£ 1										
1935 40.2 40.4 52.4 54.7 63.9 69.8 74.4 74.0 68.0 57.8 49.6 30.7 56.3 1936 33.4 36.6 49.0 53.3 66.5 72.4 75.6 74.8 70.2 58.5 44.9 42.4 56.5 1937 49.6 38.0 44.4 54.2 64.3 72.6 73.3 74.4 65.8 52.4 43.2 38.4 55.9 1938 38.2 44.8 52.4 55.8 64.2 69.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1939 40.2 44.4 49.1 54.1 63.9 74.6 74.3 73.0 69.9 59.6 44.6 40.0 57.3 1940 26.4 38.8 43.4 53.7 62.2 71.6 72.8 72.3 65.2 57.2 46.4 43.6 54.5 1941 38.8 33.8 40.7 58.4 65.6 71.8 74.8 75.1 70.4 63.0 46.9 42.7 56.8 1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 48.0 38.5 55.9														
1936 33.4 36.6 49.0 53.3 66.5 72.4 75.6 74.8 70.2 58.5 44.9 42.4 56.5 1937 49.6 38.0 44.4 54.2 64.3 72.6 73.3 74.4 65.8 52.4 43.2 38.4 55.9 1938 38.2 44.8 52.4 55.8 64.2 69.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1939 40.2 44.4 49.1 54.1 63.9 74.6 74.3 73.0 69.9 59.6 44.6 40.0 57.3 1940 26.4 38.8 43.4 53.7 62.2 71.6 72.8 72.3 65.2 57.2 46.4 43.6 54.5 1941 38.8 33.8 40.7 58.4 65.6 71.8 74.8 75.1 70.4 63.0 46.9 42.7 56.8 1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 4					54.7									
1937														
1938 38.2 44.8 52.4 55.8 64.2 69.6 73.8 75.1 67.4 57.2 48.8 39.4 57.2 1939 40.2 44.4 49.1 54.1 63.9 74.6 74.3 73.0 69.9 59.6 44.6 40.0 57.3 1940 26.4 38.8 43.4 53.7 62.2 71.6 72.8 72.3 65.2 57.2 46.4 43.6 54.5 1941 38.8 33.8 40.7 58.4 65.6 71.8 74.8 75.1 70.4 63.0 46.9 42.7 56.8 1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 48.0 38.5 55.9														
1939 40.2 44.4 49.1 54.1 63.9 74.6 74.3 73.0 69.9 59.6 44.6 40.0 57.3 1940 26.4 38.8 43.4 53.7 62.2 71.6 72.8 72.3 65.2 57.2 46.4 43.6 54.5 1941 38.8 33.8 40.7 58.4 65.6 71.8 74.8 75.1 70.4 63.0 46.9 42.7 56.8 1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 48.0 38.5 55.9														57.2
1940 26.4 38.8 43.4 53.7 62.2 71.6 72.8 72.3 65.2 57.2 46.4 43.6 54.5 1941 38.8 33.8 40.7 58.4 65.6 71.8 74.8 75.1 70.4 63.0 46.9 42.7 56.8 1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 48.0 38.5 55.9														
1941 38.8 33.8 40.7 58.4 65.6 71.8 74.8 75.1 70.4 63.0 46.9 42.7 56.8 1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 48.0 38.5 55.9														
1942 37.4 33.5 47.2 58.5 63.9 73.0 74.6 71.8 67.0 57.5 48.0 38.5 55.9					58.1	65.6								
							73.0							
	1943	41.4	40.0	44.6	53.2	65.8	75.6	74.0	75.2	64.1	54.9	44.7	39.2	56.1

Average Temperature - Asheville, N. C. Continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1944	39.6	43 .4	46.4	54.4	66.8	73.0	72.6	72.0	68.2	56.3	45.1	35.9	56.2
1945	37.0	42.3	57.0	58.4	60.5	71.0	73.9	72.8	69.6	55.5	47.8	33.4	56.6
Summa	ry of	Period	1921-	45									
Max.	49.6	48.2	57.0	58.4	67.8	75.6	76.6	75.2	73.6	63.0	53.4	47.4	57.8
Min.	26.4	33.5	39.6	52.0	58.6	68. 0	71.0	69.0	62.6	52.4	41.4	30.7	53.8
Mean	38.9	40.6	46.8	55.2	63.2	71.3	73.8	72.7	68.2	56.5	46.5	40.1	56.1
Summa	ry of	Record											
Max.	49.6	49.3	57.0	60.3	72.3	76.8	76.6	75.2	73.6	65.1	53.4	51.2	57.8
Min.	26.4	28.8	36.8	48.0	57.0	64.6	68.6	67.6	60.8	48.6	40.3	29.8	52.5
Mean	38.4	39.6	46.6	54.6	62.9	70.0	72.7	71.6	66 .5	55.4	45.9	39.1	55.3

Highest Temperature - Asheville, N. C.

}	2	,											and differences have been been been accommodated to the end. for
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Highest
1878					circ distiguis		90						
1884				Quan Class (SHO							70	68	
1885	62	000 campan	76	82	83	95				77	80		
1888	69			-									
1889	60	70	73	83	89	90	91	83	82	78	72	72	91
1890	71	73	72	85	83	90	88	86	86	80	81	69	90
1891	68	75	70	84	85	89	86	89	87	84	73	66	89
1892	60	72	75	76	86	88	89					69	on
1893	65	70	79	89	87	85	90	88	87	81	72	68	90
1894	65	68	84	82	86	91	90	90	89	81	79	62	91
1895	60	67	80	80	91	94	89	89	90	78	75	63	94
1896	58	70	75 -	90	89	87	90	92	93	76	73	65	93
1897	56	72	77	83	84	90	93	90	95	87	77	68	95
1898	70	69	86	81									
1902									86	78	74	67	
1903	63	69	73	82	90	85	90	89	84	81	72	59	90
1904	59	74	75	75	86	90	90	86	87	82	65	67	90
1905	60	54	73	81	86	87	87	88	85	80	69	58	88
1906	69	65	70	84	86	89	88	88	84	78	74	68	89
1907	72	67	86	79	83	85	91	87	88	77	71	67	91
1908	59	61	83	82	85	88	90	89	86	82	73	70	90
1909	71	68	67	86	83	88	87	90	83	77	75	66	90
1910	67	60	82	82	85	86	86	85	85	84	68	58	86
1911	68	69	83	79	87	92	89	88	86	85	70	64	92
1912	56	68	79	76	83	90	87	87	87	82	75	66	90
1913	70	67	72	80	86	89	94	88	87	81	73	68	94
1914	75	63	73	83	91	92	90	88	86	81	72	67	92
1915	60	62	63	86	85	87	92	89	86	80	74	61	92
1916	67	69	76	81	88	88	84	87	88	80	70	66	88
1917	69	72	74	84	85	90	91	88	85	78	66	63	91
1918	58	77	77	79	89	90	87	95	82	79	72	68	95
1919	64	58	71	81	82	86	91	91	89	84	73	68	91
1920	67	58	72	81	82	88	89	84	82	80	76	62	89
1921	65	71	81	83	85	87	89	92	89	79	75	67	92
1922	63	73	75	85	83	87	87	87	87	81	72	71	87
1923	63	72	78	78	80	87	88	88	83	80	64	70	88
1924	60	62	71	77	86	91	87	89	88	78	73	78	91
1925	59	71	79	89	86	88	92	96	95	78	68	62	96

Highest Temperature - Asheville, N. C. Continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Highest
1926	63	67	71	77	86	87	96	87	86	83	68	67	96
1927	73	76	78	84	87	89	89	88	90	81	74	71	90
1928	69	64	79	75	86	89	87	87	85	82	71	61	89
1929	65	64	87	84	83	86	89	87	86	72	71	67	89
. 1930	71	78	68	82	84	93	96	94	88	75	73	56	96
1931	64	63	65	78	88	95	93	92	91	84	75	73	95
1932	77	80	74	80	86	90	97	96	90	78	73	67	97
1933	72	72	79	81	90	97	91	90	89	84	74	71	97
1934	69	66	76	82	87	94	95	90	87	79	74	64	95
1935	66	71	80	82	88	89	90	95	88	82	76	58	95
1936	63	73	75	83	89	98	99	94	89	77	73	60	99
1937	74	70	74	84	89	89	93	92	87	82	72	68	93
1938	64	71	80	82	89	87	92	93	88	85	76	64	93
1939	70	75	77	81	90	92	95	91	93	85 81	69	70	95
1940	5 <u>4</u>	66 58	76 69	8 <u>5</u> 85	89 93	96 90	95 94	89 92	89 98	90	74 77	67 68	96 98
1941 1942	68	59	76	85	87	93	92	92	88	78	76	68	93
1942	74	70	77	82	89	95 94	93	94	91	83	74	73	94
1944	68	75	79	81	88	94	92	91	90	84	75	67	94
1945	55	71	85	83	87	94	93	90	88	78	79	62	94
		Period			01	/4	ا ا	/-	-00				1 / 4
Max.	77	80	87	89	93	98	99	96	98	90	79	78	99
Min.	54	58	65	75	80	86	87	87	83	72	64	56	87
Mean	66.1	69.5	76.4	81.9	87.0	91.0	92.2	91.1	88.9	80.8	73.0	66.8	93.7
Summa		Record					·	·					
Max.	77	80	87	90	93	98	99	96	98	90	81	78	99
Min.	54	54	63	75	80	85	84	83	82	72	64	56	86
Mean	66.5	68.4	76.0	81.9	86.4	89.9	90.6	89.6	87.7	80.6	73.0	66.2	92.2

Lowest Temperature - Asheville, \mathbb{N} . C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Lowest
		roo.	MCL 6		May			nug.	Depo.	0000			DONCE
1878							59						
1879									36				
1884											23	5	
1885	10		13	28.	39	57				30	25		
1887	2		11										
1888	6												
1889	13	6	21	28	30	37	57	50	36	27	15	16	6
1890	16	22	11	31	36	53	56	47	50	30	22	16	11
1891	18	14	14	23	34	50	50	52	43	29	13	15	13
1892	8	20	15	26	38	49	52					4	4
1893	- 9	18	9	26	39	51	53	52	43	23	13	13	- 9
1894	17	13	11	28	33	45	52	54	42	28	16	- 3	- 3
1895	-1	- 9	19	30	30	48	51	48	36	22	23	8	- 9
1896	4	4	17	30	47	47	49	51	35	27	21	10	4
1897	- 2	14	20	29	35	46	50	50	35	33	20	15	- 2
1898	9	4	25	22									
1902									38	28	28	11	
1903	11	5	25	26	39	41	51	59	36	25	13	10	5
1904	6	4	21	26	38	46	51	48	43	22	21	14	4
1905	-1	-6	31	28	42	49	54	47	49	26	20	14	- 6
1906	14	11	18	29	32	52	55	62	52	24	17	7	7
1907	16	17	29	23	38	48	55	49	43	27	23	18	16

Lowest Temperature - Asheville, N. C. Continued -

37 - 0	Tour	Tab	More	A	No	Tom a		A~	Cont	Oo+	Morr	Dog	Towast
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Lowest
1908	11	5	26	30	35	48	57	54	36	31	24	19	5
1909	2	4 11	25 21	30 31	31 34	53 44	52 53	47 54	35 44	25 20	21 20	3 10	2 10
1910 1911	10	14	14	26	36	50	48	55 55	55	35	13	16	10
1911	0	3	20	30	39	43	55	51	山 河	33	12	14	0
1913	22	15	18	33	37	45	51	54	36	28	21	16	15
1914	17	15	8	27	39	51	53	57	40	23	9	4	4
1915	19	18	20	25	46	49	52	52	40	27	24	20	18
1916	6	14	13	26	44	48	61	56	40	33	18	11	6
1917	8	- 5	17	30	35	40	55	49	39	23	19	-4	- 5
1918	- 2	9	25	28	33	48	51	49	35	36	28	18	- 2
1919	0	16	27	25	43	55	51	50	43	46	22	14	0
1920	4	6	8	25	39	50	56	56	41	27	18	20	4
1921	20	22	28	28	38	54	60	54	50	28	25	23	20
1922	12	13	29	30	36	52	58	49	47	32	17	23	12
1923	21	6	13	20	35	48	51	51	48	31	24	23	6
1924	- 5	16	18	24	38	50	56	55	42	27	21	13	- 5
1925	18	15	10	30	33	56	52	50	56	26	19	0	0
1926	15	16	10	29	38	43	49	59	54	30	18	17	10
1927	2	25	21	31	40	52	56	48	39	34	24	9	2
1928	- 5	13	23	27	38	45	55	58	38	35	18	19	- 5
1929	17	17	20	35	38	45	50	51	44	34	4	8	14
1930	11	13 17	12 21	29	42 36	41	56 61	49 50	45	26	22	13	11
1931 1932	20	20	10	33 33	41	45 51	50	50 52	38 41	30 30	16	23 19	14
1933	18	0	22	32	41	42	46	54	42	30	15	17	0
1934	0	6	14	29	44	54	64	54	46	26	23	8	0
1935	10	13	19	30	38	47	59	51	42	27	18	5	5
1936	1	7	24	22	43	44	55	52	46	29	12	22	î
1937	26	14	20	30	41	55	49	58	45	28	13	5	3
1938	10	22	20	28	44	51	54	56	42	32	15	15	10
1939	17	10	24	28	34	58	54	53	48	29	26	20	10
1940	1	13	18	23	34	49	51	54	35	35	18	18	1
1941	13	16	15	38	36	50	58	57	47	34	22	19	13
1942	- 2	10	26	29	38	50	56	51	36	29	18	12	-2
1943	12	5	7	25	35	59	56	53	38	26	21	7	5
1944	15	8	18	20	36	50	53	51	47	32	23	10	8
1945	14	7	30	28	37	42	59	49	50	32	21	10	7
		Period			11	1 60				72	06	I 00	
Max.	26 - 5	25	30	38	44	59	64	59	56	35	26	23	20
Min. Mean		0	7	20 28.4	33	41	46	48	35	26	14	0	-5
	11.0	13.0 Record	18.9	20.4	38.2	49.3	54.7	52.8	44.2	30.1	18.6	14.3	5.7
Max.	26	necora 25	31	38	47	59	64	62	56	1,6	28	22	20
Min.	- 9	- 9	7	20	30	37	46	47	35	46 20	4	23 - 4	- 9
Mean	9.3	11.1	18.6	28.0	37.6	48.6	53.9	52.4	42.5	29.1	19.0	12.8	4.8
mount	ر و ر		10.0	20.0	71.00	140.01	77.7	16.04	14465	L 7 0 1	177.0	175.0	L 4.0

Precipitation in Banners Elk, Avery County, North Carolina: Monthly and annual (in inches and hundredths)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1907		Com man		@ 000 000 000 000		000000000000000000000000000000000000000		000000000000000000000000000000000000000	5.32	1.90	2.84	5.81	
1908	8.65	4.86	5.11	6:64	5.57	5.67	7.60	8.24		12.54	1.23	5.54	72.95
1909	3.36	5.38	6.58	4.14	8.68	5.84	4.18	5.44	3.94	4.00	.58	4.31	56.43
1910	4.80	3.88	.62	3.12	4.29	6.81	5.75	8.87	4.78	2.91	1.39	4.40	51.62
1911	3.73	2.64	5.70	5.38	2.05	3.40	2.59	6.95	2.40	4.25	3.66	4.19	46.94
1912	2.65	4.88	6.74	5.18	3.85	4.35	6.89	1.58	3.85	1.08	3.05	1.52	45.62
1913	4.44	3.85	9.79	4.42	6.83	3.45	4.37	5.80	6.16	3.70	2.00	2.15	56.96
1914	4.18	2.89	5.87	4.22	1.15	2.84	6.36	6.73	2.60	6.10	6.44	7.88	57.26
1915	4.97	4.01	3.83	2.85	4.01	4.14	3.56	4.54	5.63	2.00	3.95	5.61	49.10
1916	3.55	3.57	4.91	1.51	3.01		24.06	5.76	3.02	3.95	1.05	3.60	63.40
1917	4.29	2.56	7.08	4.28	2.04	3.09	6.58	2.58	3.38	4.65	.30	2.05	42.88
1918	5.17	1.27	3.53	6.19	5.65	8.22	5.46	4.19	4.85	12.14	1.72	5.73	64.12
1919	6.00	3.38	2.55	4.65	7.82	5.01	7.04	4.62	2.55	5.59	1.50	3.55	54.26
1920	1.65	3.60	7.35	6.00	2.76	2.63	4.75	8.78	4.98	.60	2.70	4.90	50.70
1921	2.35	2.90	2.95	3.85	4.46		11.15	6.44	2.97	4.50	2.50	2.27	52.17
1922	2.13	2.97	7.68	3.30	4.63	4.95	6.88	3.90	1.35	4.15	.85	4.40	47.19
1923	3.11	2.29	5.48	3.13	7.22	5.08	7.29	5.73	2.47	1.10	3.06	3.51	49.48
1924	5.90	4.24	4.81	5.60	5.22	4.19	4.19	6.48	7.22	1.30	1.90	3.72	54.77
1925	3.37	3.11	2.32	3.75	1.41	6.62	2.31	.31	1.51	4.96	4.20	2.18	36.05
1926	5.50	3.59	5.41	3.29	4.46	4.13	4.66	7.06	3.04	3.40	6.93	4.83	56.31
1927	*3.06	×5.81	3.71	6.56	6.57	7.60	7.90	4.76	2.71	3.74	5.80	6.59	*64.81
1928	1.40	1.52	4.62	3.68	8.52	7.02		11.79	7.48	5.13	1.52	1.87	56.66
1929	2.60	4.51	7.22	4.00	8.97	4.43	8.88	1.95	4.33	9.35	3.25	2.08	61.57
1930	2.19	1.01	3.44	2.04	4.54	2.83	4.34	6.01	7.76	2.35	3.66	3.41	43.58
1931	2.49	2.38	3.87	4.98	4.59	5.92	5.81	4.60	2.46	.63	1.00	7.67	46.40
1932	4.45	4.67	5.35	4.98	4.42	5.13	3.71	1.98	2.45	10.77	1.84	7.48	57.23
1933	3.47	5.00	2.67	5.91	6.49	3.26	7.65	4.53	3.88	2.01	1.06	2.05	47.98
1934	2.57	2.90	7.17	4.43	2.92	4.12	7.83	4.45	2.98	3.41	6.48	2.42	51.68
1935	6.15	2.93	9.16	5.00	4.94	4.31	8.24	5.08	3.73	3.58	4.94	2.87	60.93
1936	7.61	3.36	5.98	5.86	1.99	3.51	i	10.02	6.08	6.26	1.97	4.90	64.21
1937	8.86	3.94	1.51	4.10	4.52	4.13	4.28	6.70	3.00	9.03	2.93	3.35	56.35
1938	3.17	3.91	5.01	3.23	5.16	4.08	9.74	3.30	2.92	.38	8.93	1.89	51.72
1939	4.24	6.28	2.30	2.36	4.08	4.00	7.33	6.37	1.33	1.22	1.48	2.48	43.47
	*2.70	4.77	3.61	7.54	3.58	6.34		22.69	.74	2.48	2.36	3.82	
1941	1.91	1.21	2.68	3.09	1.18		10.04	2.09	.68	1.28	2.96	3.62	36.08
1942	4.10	3 • 35	3.62	1.63	8.73	9.47		7.42	9.04	2.24	2.25	4.70	
1943	4.17	3.04	3.12	4.94	4.54	4.15		1.52	3.67	1.22	1.82	2.68	45.03
1944	2.82	7.52	6.27	3.46	3.92	2.15		3.63	5.45	4.33	3.31	1.66	49.74
1945	2.04	4.70	5.73	4.99	6.48	4.62	6.33	1.98	8.64	3.80	3.00	4.27	56.58
	ry of 8.86				8 07	0 1.7	יי יכ	22 60	0.01	10 27	T8 02	7 67	68.30
Max.		i .	9.16	7.54	8.97		11.15	Į l		10.77	8.93	7.67	. 4
Min. Mean	1.40	1.01 3.68	1.51	1.63	1.18	2.15	2.11 6.61	.31 5.63	.68 3.92	.38	85	1.66 3.63	52.79
<u> </u>	ry of		14.05	404)	14074	4.93	0,01	رن، ر	2072	3.70	1200	ر ا	16017
Max.	8.86		9.79	7.54	8.97	9 1,7	24.06	22 60	9 01	12.54	8.93	7.88	72.95
Min.	1.40	1.01	.62	1.51	1.15	2.15	2.11	.31	.68	.38	.30	1.52	
Mean	3.94		4.88	4.32	4.77	4.84	6.69	5.65	3.91	4.05	2.88	3.90	
12.0011		2000 C		4076	14011	1 4004		7807	70/1	1 4002	2800	7 87 0	77041

*Interpolated

Average Temperature - Banners Elk, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1907									63.4	48.2	38.7	34.1	
1908	28.5	28.0	47.3	52.7	58.1	63.0	66.8	65.7	59.6	49.6	43.0	35.4	49.8
1909	38.7	37.1	38.3	49.8	55.4	65.5	64.3	65.5	58.6	47.1	44.6	28.4	49.4
1910	31.7	30.7	45.1	48.1	52.6	60.7	67.1	65.0	61.7	52.1	35.1	27.5	48.1
1911	37.5	38.7	39.5	46.6	58.2	64.3	64.7	66.3	65.2	54.8	36.6	39.1	51.0
1912	27.8	27.0	38.9	50.2	57.5	61.9	66.0	63.5	63.4	51.8	36.6	34.6	48.3
				46.6	56.3	63.0	68.2	66.0	58.3	48.9	41.1	35.8	50.0
1913	39.8	33.3	42.3						58.8	51.2	38.3	32.0	48.6
1914	34.0	30.7	34.8	48.2	56.6	67.4	66.1	65.3					48.8
1915	32.3	35.8	30.7	48.9	58.3	61.9	64.7	64.3	62.3	52.3	42.6	31.0	
1916	40.5	32.9	37.7	45.8	59.4	61.0	66.9	66.9	57.3	50.8	40.1	33.5	49.4
1917	37.8	31.5	41.5	49.2	50.5	61.0	65.1	64.1	58.2	77.5	37.2	24.9	47.1
1918	23.7	38.7	74.4	47.1	59.2	63.1	62.1	67.1	54.8	52.9	41.1	38.3	49.4
1919	34.0	33.2	41.8	48.4	57.4	64.2	66.8	64.1	58.3	59.3	43.8	34.2	50.5
1920	33.3	29.9	37.3	46.7	53.4	61.4	64.1	64.4	60.8	49.3	39.5	34.2	47.9
1921	34.4	35.6	50.6	48.2	54.0	64.6	66.0	63.8	65.1	48.6	44.7	38.0	51.1
1922	33.9	39.9	42.8	50.4		63.8	66.4	62.6	60.6	51.5	41.2		*51.4
1923	36.8	30.4	39.8	47.5	54.6	63.5	64.4	64.8	60.0	48.2	38.8	42.4	49.3
1924	30.4	31.6	35.6	46.4	52.3	64.6	64.2	67.4	56.1	51.0	42.8	35.2	48.1
1925	35.0	41.2	42.5	51.1	53.2	66.0	68.0	66.6	68.2	49.0	39.0	31.3	50.1
1926	31.0	34.8	33.0	47.3	56.2	62.5	67.5	69.3	67.2	53.4	38.8	37.2	49.8
	*39.4	*47.7	41.2	52.2	57.7	63.6	65.9	62.8	62.5	53.8	45.6	33.0	*52.1
1928	31.3	35.4	41.8	46.5	54.7	62.0	67.0	67.1	59.0	52.2	41.4	33.8	49.4
1929	34.8	32.8	45.8	50.7	56.1	61.3	65.5	64.8	61.0	47.8	41.4	33.8	49.6
1930	34.7	39.0	36.6	49.8	57.7	61.2	66.6	62.7	62.6	47.0	39.0	30.6	49.0
1931	33.2	36.6	36.3	46.7	55.4	64.1	69.2	65.2	65.0	53.6	48.2	43.4	51.4
1932	42.2	42.8	36.1	48.8	56.4	64.4	69.0	67.0	61.8	51.6	40.4	39.5	51.7
1933	39.7	34.9	41.0	48.1	61.6	64.8	66.6	65.4	65.5	52.0	39.8	42.0	51.8
1934	34.6	28.1	41.4	48.8	57.6	65.6	69.6	67.7	62.3	51.9	43.8	31.4	50.2
1935	33.3	36.0	46.8	48.6	57.5	62.8	67.8	66.6	61.8	51.8	45.2	24.1	50.2
1936	28.2	30.6	44.0	47.8	58.0	64.6	68.4	67.9	63.4	55.2	40.9	39.4	50.7
1937	46.9	34.4	38.8	51.4	57.0	66.1	66.0	67.6	59.0	48.6	38.6	33.4	50.6
1938	32.4	39.9	46.6	49.8	57.6	62.0	66.6	67.9	61.7	50.9	43.0	33.4	51.0
1939					56.4	66.7	66.8	65.2					
	34.4 *20 . 3	39.6 31.2	43.0	47.0					62.0	52.6	38.2	34.8	50.6
1940	30.8		37.4 31.2	46.5	53.6 56.6	63.5	65.8	64.4	56.0	47.0	37.3	37.4 39.8	*46.7 49.1
1941		27.0			57.3		66.6	68.0	60.6	70.0	40.6	21. 1	
	37 6	27.1						65.1			山。1		49.5
1943	37.6		39.2	46.2	58.2	67.2	66.8	66.8	58.2	49.8	39.8	34.4	49.8
1944	34.1	38.8	41.2		59.0	65.5	65.3	64.1	61.4	51.1	39.7	33.0	50.1
1945	32.7	38.2	50.6		54.0	63.2	66.6	65.8	65.4	149.8	40.5	28.6	50.6
		Period			(2.51	(n o	(0.7	(0.0	170 0	7//	100	12 1	
Max.	46.9		50.6	52.2	63.7	67.2	69.6	69.3	68.2	56.6	48.2	43.4	52.1
Min.	20.3	25.6	31.2	46.2	52.3	61.2	64.2	62.6	56.0	47.0	37.3	24.1	46.7
Mean	34.1	35.4	41.0	48.8	56.7	64.1	66.8	65.9	61,8	51.1	41.3	35.4	50.2
		Record		I	<u> </u>	(=)	(0.4)	(0 -	1 (0 = 1			101	
Max.	1.6 ()	47.71	50.6	52.7	63.7	67.4	69.6	69.3	68.2	59.3	48.2	43.41	52.1
	46.9												
Min. Mean	20.3 34.0	25.6	30.7 40.6	45.8	50.5 56.6	60.7	62.1	62.6 65.7	54.8 61.2	44.2 51.0	35.1 40.8	24.1 34.5	46.7

*Interpolated

Highest Temperature - Banners Elk, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Highest
1907									80	76	64	60	nighes c
1908	55	57	79	78	81	85	83	86	82	78	69	63	86
1909	62	60	63	79	79	83	84	85	78	69	68	62	85
1910	55	55	76	76	80	80	84	80	80	75	. 62	53	84
1911	60	65	77	74	84	86	85	84	80	76	68	59	86
1912	52	59	71	75	78	81	81	82	82	76	67	62	82
1913	65	61	67	77	80	87	89	83	79	77	66	65	89
1914	69	55	67	79	84	88	87	83	80	75	63	58	88
1915	55	58	54	80	78	78	86	82	80	74	65	53	86
1916	63	60	68	76	83	82	83	81	82	76	65	60	83
1917	60	64	73	79	80	83	84	81	80	71	59	50	84
1918	51	72	68	73	81	83	79	91	77	75	69	62	91
1919	58	52	66	77	79	79	85	82	82	77	68	60	85
1920	60	48	62	78	76	80	78	76	75	73	67	54	80
1921	55	57	73	79	79	80	80	85	78	71	68	61	85
1922	61	66	68	79		82	81	78	78	7 5	71	59	
1923	58	57	67	70	73	79	80	80	74	72	55	64	80
1924	57	58	66	74	78	85	84	85	83	77	74	75	85
1925	56	67	77	86	82	86	86	94	93	75	59	61	94
1926	60	61	66	77	82	85	95	87	82	80	64	64	95
1927			73	80	83	85	86	84	87	81	71	70	87
1928	67	71	77	77	85	82	85	85	84	82	71	60	85
1929	65	60	82	78	77	84	85	85	85	73	71	65	85
1930	74	72	61	78	83	87	90	90	85	74	75	58	90
1931	57	57	58	73	81	88	88	85	87	80	73	72 63	88
1932	73 62	75 68	69	74	82 81	83 92	90 86	91	89	75 93	68	63	91
1933	62	60	72 68	75	84	90	90	83 91	83 82	83 75	71 69	66 55	92
1934 1935	63	66	71	77 75	81	84	83	85 86	81	79	74	57	90 86
1936	59	69	69	77	82	90	89	89	83	79	72	59	90
1937	70	67	66	80	84	86	87	85	85	77	71	59	87
1938	59	65	74	75	84	80	84	87	83	83	72	60	87
1939	65	67	71	76	82	84	85	86	86	81	67	66	86
1940		58	70	79	82	83	88	82	79	79	62	57	88
1941	56	50	64	78	85	81	84	91	87	86	71	64	91
1942	66	53	69	80	82	86	86	85	83	77	70	66	86
1943	69	65	69	76	81	85	85	86	86	78	70	66	86
1944	62	65	73	75	83	90	86	88	83	77	72	59	90
1945	54	65	78	79	78	85	82	84	81	76	75	53	85
	ry of	Period		45									
Max.	74	7 5 .	82	86	85	92	95	94	93	86	75	75	95
Min.	54	50	61	70	73	79	80	78	74	71	59	53	80
Mean	62.2	63.3	70.0	77.1	81.4	84.9	85.8	85.8	83.5	77.8	69.4	62.4	87.9
***	ry of												
Max.	74	75	82	86	85	92	95	94	93	86	75	75	95
Min.	51	48	54	70	73	78	78	76	74	69	59	50	80
Mean	61.0	61.8	69.5	77.1	81.0	84.1	85.1	84.8	82.2	76.7	68.1	61.0	87.0

Lowest Temperature - Banners Elk, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Lowest
1907									32	21	15	9	
1908	2	- 3	14	23	29	37	45	42	29	25	13	8	- 3
1909	- 5	- 3	18	18	25	42	38	36	29	17	14	- 5	- 5
1910	4	1	15	26	22	33	46	45	35	11	13	0	0
1911	5	8	7	19	26	37	38	42	48	27	8	10	5
1912	-8	- 3	10	20	31	35	46	38	35	23	4	6	-8
1913	13	2	10	21	23	36	40	43	29	23	12	6	2
1914	10	7	2	17	29	47	41	45	32	16	5	- 2	- 2
1915	3	9	10	15	32	37	42	42	34	23	16	12	3
1916	-3	5	5	13	35	38	48	49	32	25	11 12	0	- 3
1917	0	-11	7 16	24 22	32	30 39	44	40	32 29	15 26	21	-21	-21 -10
1918	-10 -7	1 16	19	16	25 33	46	40 40	39 42	31	39	15	9	- 10
1920	-10	- 3	- 7	13	26	42	44	50	37	20	11	12	-10
1921	13	13	21	17	26	44	49	41	46	24	18	17	13
1922	5	5	21	25	34	38	50	39	39	22	4	16	4
1923	12	- 1	6	7	26	36	48	42	40	22	16	17	-1
1924	-12	2	10	16	30	38	44	45	31	16	13	3	-12
1925	9	9	0	22	25	47	44	40	43	14	10	-10	-10
1926	4	1	2	21	27	33	35	48	50	20	8	7	1
1927			8	21	34	40	43	41	30	21	13	0	
1928	-13	4	12	14	27	35	47	47	28	22	9	9	-13
1929	3	7	10	22	26	30	39	36	30	21	- 7	- 5	-7
1930	- 3	-2	0	17	30	27	38	31	32	12	0	<u>-1</u>	3
1931	2	12	16	26	35	33	46	40	27	20	17	15	2
1932	15 10	13 - 6	3	24 25	28 35	42 31	40 36	41	31 35	26 24	10	8 8	3 -6
1933 1934	- 15	<u>-</u> 2	9	21	31	43	50	45 44	34	18	9 13	- 2	<u>-</u> 15
1935	-1	6	14	24	29	35	48	38	28	16	8	<u>-5</u>	<u>-5</u>
1936	-8	- 1	18	12	30	32	45	43	35	22	0	11	-8
1937	17	6	5	19	28	43	38	46	32	16	3	<u>-</u> 1	- 1
1938	2	13	10	19	32	36	45	44	37	23	3	8	2
1939	5	3	11	16	21	45	40	43	33	16	14	8	3
1940		3	3	13	27 .	34	41	41	24	25	11	5	
1941	1	4	-	26	25	36	46	45	33	22	10	6	1
1942		- 5	18	18	30	40	48	39	26	21	11	0	-14
1943	2	-7	- 3	14	24	49	48	39	28	25	11	-2	-4
1944		-9 -1	8	12	31	41	44	42	36	21	12	-2	-9
1945		<u> </u>	22 1921 -	17	30	34	49	38	49	24	15	5	<u>-l</u>
Max.	17	Period 13	22 22	45 26	35	1.0	K 0	48	50	26	18	17	12
Min.		<u>-</u> 9	- 3	7	21	49 30	50 35	31	2jt	26 12	<u>-</u> 7	17 -10	13 - 15
Mean	1.7	2.9	9.1	18.7	28.8	37.7	44.0	41.5	34.3	20.5	9.2		
		Record		1001	20.0	2101	44.0	4107	74.07	2007	/ 02	4.0	ره ر
Max.	17	16	22	26	35	49	50	50	50	39	21	17	13
Min.	-15	-11	- 7	7	21	30	35	31	24	11	-7	-21	-21
Mean	0.8	2.6	9.3	18.8	28.7	37.9	43.5	41.9	33.9	21.1	10.3		1

Precipitation in Hendersonville, Henderson County, North Carolina: Monthly and annual (in inches and hundredths)

			Caroli	ina: 1	Monthly	and a	nnual	(in i	nches a	and hur	ndredth	ıs)	
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1890		000 em 1000							2.28	6.58	0.32	2.08	
1891	7.80	10.73	11.67	1.35	3.58	3.50	6.86	3.55	4.97	.10	8.00	4.09	66.20
1892	6.72	1.87	3.65	6.85						~~~~~			
1898	*4.90		*1 .70	*3.90		5.71	11.21	8.61	7.81	11.64	3.08		67.01
1899	3.75	9.43	9.27	4.21	3.74	5.08	4.07	5.40		2.38	1.80		58.48
1900		10.10	5.76	8.06	3.83	8.79	5.75		3.80	4.10	3.47		64.11
1901	3.39	1.76	6.55	8.52	8.94	9.13	5.22	26.58	5.78	2.90	1.32	12.51	
1902	2.15	8.75		1.90	2.14	5.51	1.74	3.26		4.26	3.46	5.65	
1903	4.24	10.00		4.38	2.88	7.01	6.50	5.56		1.98		1.55	
1904	2.48	3.80	5.88	2.13	4.68	4.25	3.65	6.31	1.44	.01	3.20		40.96
1905	5.20	5.86	2.57	2.02	7.97	7.02		11.31	1.83	3.42	.38		69.18
1906	12.40	1.21	6.81 3.51	2.42	3.11 5.69	10.28 5.67	6.72	3.64	14.00 5.53	4.26	2.78 6.29		*77.03
1907	.39	1.69	4.01	5.35	3.74	3.05	2.91 6.81		2.78	.91 10.53			48.20 70.07
1900	5.54 4.44	8.19 5.84	6.74	4.14	6.65	10.46				3.58			65.28
1910	3.57	4.58	1.91	2.35	6.97	5.38		11.74		4.78			59.61
1911	4.68	3.06	3.26		1.88	<u>96،</u>	2.58			6.33			49.19
1912	2.32	4.90	7.70	4.54	6.99	7.08		3.17	4.94		2.53		56.69
1913	3.41	4.13	10.14	2.93	*6.10	* 3.60							* 55.21
1914	2.10	4.13	2.81	6.11	.95	3.89	3.98		2.99	9.14	8.27		61.34
1915	7.62	5.71	4.01	.43	7.62	7.30				6.60	4.46		67.63
1916	2.44	5.86	2.00	3.48	4.50	7.82	22.09	4.83	2.26				
1917	4.19	4.23	8.76	3.27	3.40	3.35			7.87	3.55			50.34
1918	7.95	2.23	2.28	4.43	4.52	4.18	4.30						
1919	6.23	4.07	7.87	2.52	6.30	8.28	5.12	4.36		3.03	1.80	2.18	51.98
1920	4.06	3.44	7.61	9.38	2.91	7.85	5 .1 5	13.57	4.60		.3.59	7.96	71.30
1921	5.53	5.34	3.02	5.34	4.82	4.24	6.07	4.16			3.87	2.93	
1922	4.54	5.46	7.62	4.68	5.66	5.34	9.08	2.80					*57.95
1923	4.53	2.59	5.73	4.06	11.07	3.07	4.05	5.27	6.28	1.33		4.52	57.04
1924	8.32	4.59	4.15	7.35	3.09	2.83	7.40	2.08		1.59	.63	5.75	
1925	6.79	1.72	2.46	2.59	2.11	2.37	1.82	.49	1.06	4.61	4.65		32.55
1926	6.17	4.77	4.12	2.82	2.07	1.87	6.00		3.37	1.93	6.82		47.97
1927	1.59	4.50	3.67	3.37	2.87	3.66		5.23	1.94	4.38			49.17
1928	2.00	3.80	5.65	6.34	5.98	7.05		12.07	7 .08	6.38	1.08	1.13	
1929	4.77	6.94			7.01	7.42			13.77	8.24	5.09		
1930 1931	4.13	2.53	5.32 3.95	4.04	7.54	2.10	1.29 5.02	2. 1 9 4.47	8.42 .50	2.48	4.11		55.42 44.63
1932	6.78	2.79	4.73	2.00	4.30	8.24		3.44	2.72	10.35	4.70		65.62
1933	2.16	4.89	4.14	4.71	5.27	4.74		9.92	4.02	2.60	1.74		52.97
1934	3.96	4.51	7.72	4.48	4.54		6.02	5.95	5.85	5.01	7.31		69.58
1935	6.57	2.83	3.16	4.25	5.07	2.77	11.63	6.65	2.77	1.97	7.86		58.63
1936	11.24	4.92	6.82	8.18	1.60	1.45	6.60	6.99			2.04		71.45
1937	9.80		1.10	5.51	4.04	2.28			5.13	10.13	1.51		*58.36
1938	2.97	1.77	5.86	2.54	4.16	6.05	10.19	1.66			4.94		47.00
1939	6.03	10.66	3.44	4.10	3.25	7.00	4.91	7.55	1.61		.91		47.93
1940	4.17	4.02	3.89	5.16	2.86	5.26	5.06	16.68	.44		3.55		59.52
1941	2.13	1.45	3.63	5.27	1.60	4.96	9.57	5.15	.45	1.95	2.57		45.91
1942	3.30	4.77	6.32	.95	12.70	4.84	4.36	5.63		1.51	1.97	8.79	61.28
1943	6.30	2.93	5.86	5.25	4.76		8.09	،70			4.20		55.38
1944	3.84	8.75	8.08	4.11	3.77	4.08		2.72	7.56	3.23	3.27		54.60
1945	2.18		4.97	5.36	3.54	2.59	7.50	4.96	9.07	2.79	2.55	5.82	57.54
	ry of I		1921-1					_ ;					
Max.		10.66	8.08		12.70					10.35	8.11		72.98
Min.	1.59	1.45	1.10	.95	1.60		1.29				.63		32.55
Mean	4.90	4.39	4.93	4.43	4.72	4.65	6.24	5.11	4.69	3.59	3.57	4.93	56.10
Summa		Record	75 /=	0.001	7.0 = 5	33 27	00.00	0/ 70	31 551	31 75	0 5=	30 00	00 (0
Max .		10.73	11.67		12.70		22.09					7-3	92.60
Min.	.39	.70	1.10			.96	1.29		.22	.01			32.55
Mean	4.77	4.72	5.32	4.33	4.71	5.33	6.29	6.07	4.59	4.10	3.18	5.30	58.90

*Interpolated

Average Temperature - Hendersonville, N. C

				Avera	ge Tem	peratu	re - F	ienders	sonvill	e, N.	U _o		
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		Nov.	Dec.	Average
1890	-				1				63.5	54.5	50.9	40.6	
1891	38.6	45.4	43.8	56.9	63.2	72.5	71.0	73.1	67.0	52 .4	44.2	43.5	56.0
1892	35.4	42.3	44.1	55.3									
1898						71.1	72.4	72.7	67.8	54.6	43.9	39.1	
1899	38.2	34.9	47.0	52.1		71.7	72.4	74.4	65.1	57.0	49.1	36.9	55.4
1900	36.6	34.7	45.1	54.4	62.4	70.3	73.5	75.4	70.4	62.6	50.0	40.5	56.3
1901	37.7	36.0	46.4	48.6	61.8	69.9	75.0	71.5	65.3	55.7	41.7	36.6	53.9
1902	37.0	32.6	46.5	53.2	66.7	71.2	73.7	72.6	65.0	58.1	52.4	40.7	55.8
1903	38.5	42.8	52.4	54.6	64.3	66.1	73.4	73.4	65.0	55.7	42.4	33.6	55.2
			47.5	50.3	61.3	67.9	69.9	70.4		53.9	44.6	39.1	53.5
1904	33.3	37.2						69.0		56.3	47.8		54.6
1905	34.2	32.2	50.6	55.6	64.9	69.6	70.7			54.5	47.5	37.3 41.8	24.0
1906	41.4	39.3	43.8	57.2	62.0	69.9	71.1	70.0					
1907	46.2	70.0	54.9		61.8	67.5	74.4	72.0		53.5	45.3	39.6	
1908	36.1	35.5	53.6	58.4	63.8	69.0	73.2	71.4	65.0	57.4	49.2		56.3
1909	42.6	144.0	46.1	56.4	60.6	70.6	70.9	71.6	65.1	53.4	51.0	34.5	55.6
1910	37.7	37.6	52.3	55.5		66.7	72.7	71.1	68.6	58.9	43.0	34.0	54.8
1911	43.1	48.9	47.5	52.0	64.5	72.0	72.0	72.0	70.7	59.4	41.9	41.8	
1912	32.0	35.3	45.3	57.4	63.3	67.0	71.7	70.4	69 0/4	57.7	44.6		54.6
1913	44.8	39.9	48.5	53.6								41.6	
1914	40.1	37.8	43.0	55.4	62.9	73.8	72.9			57.6	44.4	36.2	
1915	36.5	40.5	38.9	55.7	64.4	67.5	71.7	70.6		58.1	47.5	37.5	54.7
1916	44.8	39.0	44.9	52.8	64.4	67.7	71.8	72.4	64.0	55.3	46.2	38.6	55.2
1917	41.9	38.9	47.1	57.0	58.0	67.3	71.9		63.6	49.6	44.1	29.4	53.2
1918	29.4	44.6	52.9	52.8	66.3	69.8	69.9	73.1	61.8	58.8	46.2	43.5	55.8
1919	38.5	38.0	49.1	55.5	63.4	70.3	73.1	71.6	66.0	65.7	48.1	39.4	56.6
1920	39.6	37.6	45.2	53.5	60.6	68.7	72.0	70.9	68.6	56.9	46.0	38.4	54.8
1921	40.3	41.8	55.5	55.5	61.2	71.3	73.0	70.8	72.2	54.0	49.8	43.1	57.4
1922	38.9	45.4	48.8	57.7	63.8	70.8	72.9	*72 _° 1	*70.l	* 57 . 4	46.2	43.6	* 57.3
1923	40.9	40.2	48.0	54.0	61.1	70.2	72.0	72.6	68.2	54.2	44.6	46.9	56.1
1924	34.2	36.4	44.2	54.8	58.6	71.6	71.2			55.0	47.8	40.8	54.2
1925	39.0	46.2	49.5	58.6	60.0	72.6	74.8				44.6		
1926	37.7	42.6	41.2	54.2	63.7	69.8	73.8			58.5	42.6		
1927	38.3	49.0	47.9		65.2	68.8	72.6			58.8			
1928	37.8	40.3			61.6	68.8	73.4						
	39.6			58.1	63.5		72.8		67.2				
1930	40.6	46.0	45.8	57.1	65.3	68.4	75.8	71.9	70.6		44.1	35.3	
1931	39.0	42.5	43.3	54.0	62.3	71.8	76.3	72.0	72.1	59.4	52.5	48.0	
1932	46.6	48.5	44.2	56.2	62.8	71.2	76.1	72.7	67.4	57.7	44.5	43.0	
1933	45.7	40.8	48.2	54.6	68.2	72.3	72.5	70.9	70.7	56.2	46.4	47.0	
1934	41.8	35.4	45.8	56.6	63.4	72.0	75.8		69.4	58.0	48.9	37.6	
1935	41.0	42.0	54.0	56.0	63.6	70.2	73.5	73.0	68.0	58.0	50.2	32.6	
1936	34.6	37.7	50.0	54.8	65.8	72.6	74.4		69.4	58.8	45.1	42.4	
1937		*41°4	46.6	54.2	63.2	72.4	73.6		64.9	52.3	43.2	38.0	*56.1
1938	39.0	45.2	52.9	55.0	64.2	68.8	73.2	75.1	68.7	56.3	48.4	39.2	
1939	40.8	45.8	49.4	55.2	63.4	75.0	74.8		69.8	59.2	44.6	40.4	
1940	26.3	39.0	45.4	55.0	62.4	72.2	72.4				46.0	43.5	
1941	39.3	34.8	41.8	57.8	66.0	72.1	74.4		69.1	64.5	47.2	43.1	57.1
1942	37.7	35.5	48.0	58.3	64.0	72.4	75.2		67.6		48.2	39.4	
1943	41.4	41.8	44.6	52.6	65.8	74.8	73.9			55.0	44.8	41.0	
1944	39.8	45.2	44.0	54.7	66.0	73.0	72.0		68.5	56.6	45.8		
1945	39.7	43.7	57.4		61.6	71.8	74.4		70.5	56.2	48.4	33.6	
	ary of		1921-	-115	01.00	1 1 1 0 0	1404	1200	1000	2002	40.4	ان رر	7104
Max.	49.9			59.0	68.2	75.0	76.3	77.9	73.6	64.5	52.5	48.0	57.8
Min.	26.3		41.8	52.6	58.6	68.4	71.2	70.4					
Mean	39.6		48.0	55.7	63.5	71.4	73.8			57.1	46.8	40.5	56.6
	ry of			7701	ره رپ	1 1 - 0 - 4	الاهرا	1607	00.0	ノーの上	40.0	40.5	70.0
Max.	49.9		57.4	59.0	68.2	75.0	76.3	77.9	73.6	65.7	52.5	48.0	57.8
Min.	26.3		38.9		58.0	66.1	69.9						
Mean	39.1	40.4	47.7	55.0	63.3	70.5	73.0				41.7		
		olated		2200	رەرى	71.0		1604	الروال	ں و ں ر	40.0	ال و رز	70.0

*Interpolated

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		Nov.	Dec.	Highest
1890			MCCI 6						76	74	70	62	nighes v
1891	63	70	69	79	82	86	82	84	82	76	68	64	86
1892	58	63	66	75									
1898						92	90	89	87	83	70	67	
1899	66	70	73	83	88	93	95	94	91	80	73	63	95
1900	65	66	76	82	88	86	90	94	94	84	79	66	94
1901	64	69	73	83	86	90	94	91	85	80	76	75	94
1902	68	62	70	81	89	94	93	95	87	81	79	71	95
1903	67	71	73	85	93	86	91	93	87	84	72	60	93
1904	60	73	76	78	87	88	91	87	88	84	69	64	91
1905	63	58	74	80	86	87	88	88	86	81	73	59	88
1906	65	65	70	82	87	89	87			76	73	66	
1907	74	68	88	78	84	84	93	90	87	77	71	67	93
1908	60	65	80		86	90	90	90	87		74	74	90
1909	77	67	67	83	83	86	89	91	85	81	76	69	91
1910	71	68	82	87	87	86	88	86	88	86	70	57	88
1911	75 61	74 64	84 78	80 78	88 87	95 90	93 89	90 90	88 89	87 83	67 77	63 70	95 90
1912	68	69	78	79	01		09	90 	09	05		69	
1914	73	64	77	85	92	94	92	89	88	82	75	66	94
1915	59	65	65	87	88	85	91	89	86	79	74	60	91
1916	67	66	75	84	89	87	85	87	88	82	72	69	89
1917	70	73	73	85	86	89	90	89	84	80	68	66	90
1918	60	78	79	81	91	92	90	93	86	89	70	68	93
1919	61	58	75	83	82	87	92	91	91	87	77	67	92
1920	66	61	75	83	84	90	90	86	85	81	75	56	90
1921	64	68	84	83	84	89	88	90	91	81	75	66	91
1922	66	71	76	86	85	87	87				78	67	
1923	63	73	79	83	81	88	90	90	86	81	66	69	90
1924	63	63	76	80	86	92	91	92	90	80	73	77	92
1925	64 68	72	81	90 83	87	90 92	94	98 90	98 89	81 85	70 66	65 71	98 99
1926 1927	75	69 77	77 79	88	90 90	92 92	99 92	89	92	85	77	73	92
1928	71	65	78	78	87	90	89	89	87	86	72	63	90
1929	65	65	87	87	83	88	91	90	86	78	75	71	91
1930	74	84	73	87	87	94	97	98	93	81	73	59	98
1931	66	68	67	80	87	95	95	92	96	90	78	75	96
1932	77	78	78	85	86	89	95	95	93	81	70	67	95
1933	77	74	80	83	92	95	91	86	87	80	76	71	95
1934	71	70	78	86	87	91	93	89	87	82	79	64	93
1935	66	71	87	80	87	92	91	93	89	85	80	59	93
1936	63	80	78	87	91	97	94	93	88	77	73	60	97
1937	75	77	73	87	90	91	94	90	87	83	73	66 67	94
1938	65	71	81 80	83	91	88	92 ol.	93	90	86	80	65	93
1939 1940	71 56	75 69	80	82 85	89 93	93 93	94 95	92 92	93 91	89 83	71 75	73 70	94 95
1941	70	61	69	86	94	92	92	91	94	92	78	70	94
1942	68	62	77	86	88	91	94	94	90	80	79	68	94
1943		74			89	94	92	96	92		76	75	96
1944	75	75	79	81	90	94	95	93	92	82	74	68	95
1945	64	74	88	87	88	96	95	91	89	79	80	61	96
		Period											
Max.	77	84	88	90	94	97	99	98	98	92	80	77	99
Min.	56	61	67	78	81	87	87	86	86	77	66	59	90
Mean	68.2	71.2	78.5	84.3	88.1	91.7	92.8	91.9	90.4	82.9	74.7	67.6	94.2
		Record		00 1	01.	07	00	98	98	02	80	77	99
Max.	77 56	84 58	88 65	90 75	94 81	97 84	99 82	96 84	76	92 74	66	56	86
Mean	67.0	69.1	76.7	83.1	87.6	90.4	91.5	90.9	88.6	82.3	73.8	66.6	93.0
1.0011	0 00	0/04	1001	_ U J 0 1	01.00	70 04	1200	1001	0000	10207	1780	, 00	17700

				Lowes	t Temp	eratur	e - He	naerso	nville	, IV . C	0		
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Lowest
1890				(ph ===qm			an on	(m) (m) (m)	49	31	26	19	
1891	18	17	22	24	41	59	57	62	54	31	14	16	14
1892	12	21	15	30				corte como como					
1898						48	53	60	43	24	14	4	
			5	26	20	46	1.7	56		27	24	6	- 9
1899	11	-9	2)		39	40	47	20	33		18		-) -1
1900	4	-1	14	26	33	53 45	50	55 53	43	38		20	
1901	14	8	8	28	38	45	57	53	37	29	15	-2	- 2
1902	8	9	12	28	38	48	51	51	37	27	24	10	8
1903	10	6	25	27	36	41	51	56	36	23	12	9	6
1904	-8	3	23	20	34	43	50	50	38	20	19	14	- 8
1905	2	3 - 3	26	23	41	47	55	44	43	27	18	15	- 3
1906	12	11	18	30	29	51	57			23	19	6	6
1907	16	15	30	25	37	45	56	51	42	27	20	19	15
1908	12	í	24		35	49	55	52	35		24	18	ı
1909	4	0	21	23	30	51	50	45	34	27	18	5	4
		9				26	52	47.	40	18	17	10	8
1910	13	7.7	22	30	30	36 46	48	54 52	52		15		12
1911	12	15	16	27	33			24		30		15	
1912	0	6	21	28	38	39	54	49	42	31	10	11	0
1913	17	15	17	32								16	
1914	13	13	10	28	33	52	49	55	37	32	11	2	2
1915	16	14	19	24	42	46	52	51 52	36	26	22	17	14
1916	9	14	13	28	37	43	58	52	39	28	14	9	9
1917	10	-4	16	31	33	38	53	49	35	23	19	- 2	-4
1918	- 3	9	22	24	33	44	48	44	32	29	22	19	-3
1919	6	18	25	25	40	52	45	49	34	45	18	14	6
1920	6	6	8	23	35	46	53	55	41	28	14	16	6
1921	18	22	26	24	31	48	58	50	52	23	20	22	18
1922	14						58				10	21	10
		13	27	31	34	46							
1923	19	6	14	16	31	47	48	52	47	27	22	14	6
1924	-3	15	18	20	33	44	52	48	38	25	16	6	-3
1925	14	15	10	27	30	50	48	43	50	24	16	0	0
1926	10	14	11	26	33	44	46	58	52	27	14	12	10
1927	14	23	17	28	33	51	57	48	36	30	22	10	4
1928	-4	12	19	27	35	41	56	57	36	27	18	11	-14
1929	12	15	15	30	39	45	49	45	40	29	6	7	6
1930	14	9	14	25	41	39	53	46	47	23	11	6	6
1931	11	20	21	32	37	43	59	50	35	26	19	16	11
1932	20	21	10	31	39	49	47	51	40	30	14	13	10
1933	15	2	17	29	44	42	45	53	44	27	12	17	2
1934	1	8	13	30	41	54	62	54	46	26	21	10	ī
1935	10	13	17	33	36	46	59	50 50	45	26	17	6	6
1936	3	5	26	22	41	41	54	49	45	28	11	21	3
	24	כ				47 47	74	47 29	1.0	20)
1937	26	3.0	18	26	39	51	50	58	42	25	10	5	2.0
1938	10	17	22	25	39	43	49	54	35	29	13	16	10
1939	12	2	24	25	30	58	52	54	45	22	22	16	9
1940	-1	9 15 8	18	23	_32	47	48	54	31	30	18	10	- <u>1</u>
1941	12	8	1 5	30	30	50	59	53	41	33	18	21	8
1942	0	12	22	22	38	50	56	44	30	26	15	10	0
1943		5			28	55	55	56	33	dan dan aas	17	11	OH OH OH
1944	14	8	2.4	22	33	46	50	52	46	28	24	6	6
1945	13	9	27	20	30	45	55	47	50	29	19	10	9
		Perio				42		41					
Max.	26	23	27	33	44	58	62	58	52	33	24	22	18
Min.	-4	2	10	16	28	39	45	43	30	22	6	0	-4
Mean	10.2		18.1	26.0								1	5.5
				20.0	35.1	47.0	53.0	51.0	41.8	27.0	16.2	11.9	7.5
Summa		Record		2.2	1 1 1		(0)	70		12	07	T 00	120
Max.	26	23	30	33	44	59	62	62	54	45	26	22	18
Min.	-8	-9	5	16	28	36	45	43	30	18	6	-2	-9
Mean	9.5	10.4	18.1	26.3	35.4	46.7	52.6	51.5	40.7	27.5	17.0	11.7	4.6

Precipitation in Hot Springs, Madison County, North Carolina: Monthly and annual (in inches and hundredths)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1906	* 5.00	% 1.00	*4.50	*3.00	*4.50	* 5.90	* 6.10	*4.50	*3.00	2.48	4.15	3.38	47.51*
1907	.28	2.21	3.15	4.05	4.97	5.02	5.90	4.28	5.32	1.80	4.31		43.52
1908	5.15	2.85	3.94	3.89	3.42	2.36	8.35	6.61	1.18	5.99	1.98	6.02	51.74
1909	1.80	4.12	6.82	4.07	4.90	6.93	6.41	7.55	3.01	2.57	.35	2.41	50.94
1910	3.76	2.72	.64	3.22	4.89	4.51	8.38	4.96	3.61	1.47	1.61	2.41	42.18
1911	2.18	3.19	5.53	5.02	.54	1.97	5.39	3.98	3.56	3.42	2.52	2.05	39.35
1912	1.87	3.44	4.57	7.05	3.05	3.37	6.14	1.61	3.00	1.35	2.03		39.78
1913	4.37	2.56	6.43	2.98	5.66	5.95	1.37	6.09	3.61	2.33	1.96	1.61	
1914	1.65	1.08	3.30	3.54	.36	2.54	5.83	5.70	2.18	2.65	1.83		35.58
1915	1.34	1.29	2.64	1.01	7.75	5.52	2.69	5.58	3.22	1.60	2.70		39.94
1916	2.70	3.19	3.55	2.20	3 .53	3.84	5.14	4.03	1.78	2.48	1.49	2.83	
1917	4.48	2.59	9.81	4.05	2.00	3.74	5.79	5.67	3.66		.75		46.40
1918	4.99	2.73	4.44	3.93	4.68	5.46	1.84	3.26	4.40	5.82	.95		43.96
1919	3.54	2.05	2.53	2.44	3.50	6.16	1.48	1.99	.94	5.45	.82	3.29	
1920	4.17	3.86	5.72	7.09	1.91	4.33	5.83	11.16	5.40	.41	3.28	4.33	
1921	3.44	3.99	2.65	4.17	4.36	3.97	7.74	5.73	3.88	2.02	3.88		47.51
1922	4.50	3.11	4.53	4.27	3.38	5.03	7.24	1.88	1.29	1.82	1.21		45.10
1923	4.66	3.03	4.09	3.02	3.29	2.36	3.32	7.30	1.52	1.07	1.64	3.45	
1924	3.91	2.87	2.73	3.59	4.44	3.90	4.32	4.98	4.52	1.27	2.09		43.47
1925	1.85	2.14	1.51	3.31	1.79	1.46	3.56	.57	2.06	6.19	2.25		28.23
1926	4.18	3.63	4.54	3.13	2.36	5.44	3.27	5.66	.88	3.65	3.32		45.56*
1927	1.89	4.30	3.69	3.80	4.70	3.97	6.39	4.91	1.79	2.07	2.59		46.39
1928	2.75	1.14	4.98		6.96	8.65	5.09		5.82				
1929				4.10				4.30		3.39	.35	1.55	
	2.48	2.84	5.33	3.49	7.48	3.48	7.32	3.40	4.14	4.42	2.43		48.90
1930	2.12 .66	1.79 1.69	4.02 2.18	2.46 4.98	3.79 3.07	2.70 .83	4.07 7.80	3.19 6.58	3.56	2.36 .63	3.58	1.27	
1931	3.38	4.62	5.16	4.04	2.22			1.76	2.77 1.89		1.04 8.08	5.55	
1932						4.05	4.53			7.59			53.68
1933	3.29	3.67	2.25	3.46	4.94	3.62	5.85	8.00	2.28	*1.60	.99		42.52*
1934	*1.50	*3.67	6.16	5.35	3.12	5.22	5.35	4.61	3.41	5.45	3.53		48.99*
1935	2.69	2.82	5.39	3.85	2.89	3.91	3.63 8.52	3.87 5.12	1.07	2.11 5.28	3.20		36.24
1936	7.10	3.58	6.67	4.67	2.57	1.67			6.78		1.30		57.12
1937	7.01	3.85	1.32	3.44	3.03	3.87	4.94	5.44	3.50		.47		43.49
1938	2.77	2.58	5.56	2.40	4.54		8.39		4.04		4.03	2.30	
1939	2.57	5.64	2.99	2.50	1.59	3.37	4.03	1.94	.48	.37	.65	2.05	
1940	1.47	3.29	3.81	4.02	2.18	4.61	6.23	11.34	1.17	2.72	1.16		43.61
1941	2.11	.88			1.56		7.70	2.17	2.40	1.66			30.93
1942	2.67		4.64	1.17		*5.50							48.14*
1943	3.09	2.50		2.64	2.89		5.78				.95		36.16
1944	1.64	6.85	4.59	3.53		4.98			6.18				41.97
1945	2.58	4.11	4.04		3.58	5.59	6.97	4.14	3.34	2.95	3.75	5.50	47.34
	ry of I			17	a 10	0 72	0 26		(50		0.00		ICO 30
Max.	7.10	6.85	6.67	5.35		8.65		11.34	6.78				57.12
Min.	.66	.88	1.32	1.17	1.21	.83	1.90				.35		28.18
Mean	3.05	3.25	4.04	3.45	3.45	4.13	5.61	4.43	2.99	2.77	2.31	3.25	42.74
	ry of I					- 6 - 2 - 2						1	125 15
Max.	7.10	6.85		7.09		8.65		11.34		7.59	8.08		57.49
Min.	.28	.88		1.01			1.37						28.18
Mean	3 .09	2.98	4.21	3.59	3.55	4.27	5.42	4.69	3.07	2.78	2.21	3.17	43.07

*Interpolated

1889					Avera	ige Tem	perati	ıre - H		ings,				
1890 50.5 52.9 17.1 59.3 65.4	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Average
1890 50.5 52.9 17.1 59.3 65.4	1889			g= as us e=			69.4	74.9	71.4	67.0	55.9	48.1	52.9	
1902 11.3 37.6 51.0 51.9 70.2 72.9 76.1 75.3 67.3 59.1 51.1 11.2 58.5 59.3 59.3 11.4 56.5 51.1 57.5 68.8 57.6 71.8 68.2 59.6 18.8 31.4 57.6 57.8 1905 31.6 31.2 52.9 56.8 69.0 73.1 71.0 72.8 70.9 56.1 19.8 13.2 57.3 1906 11.8 11.2 12.2 16.1 58.7 67.7 76.3 79.1 80.1 76.6 57.8 18.5 12.3 60.2 1907 19.1 10.8 56.1 52.9 56.8 69.0 73.1 71.0 72.8 71.0 72.8 57.9 16.7 12.0 58.7 1906 18.8 18.2 57.3 1906 18.8 18.2 57.3 16.9 67.7 73.1 77.8 71.0 72.8 71.6 57.9 16.7 12.0 58.7 1906 18.8 18.2 57.3 1906 18.8 18.2 56.1 61.9 67.7 73.1 77.8 71.5 67.8 57.9 16.7 12.0 58.7 1906 38.1 38.2 56.1 61.9 67.7 73.1 77.7 71.5 67.8 55.7 16.7 12.0 58.7 1909 1903 92.6 10.5 56.0 56.1 61.7 69.1 71.2 73.7 71.5 67.2 55.0 11.6 59.0 1909 19.5 81.5 71.1 1911 14.0 10.5 56.0 56.1 65.2 72.2 74.8 74.0 75.5 75.5 61.1 17.1 11.9 60.0 60.7 17.8 51.8 60.1 65.2 72.2 76.8 75.5 75.5 61.1 17.1 11.9 60.0 60.7 60.0 60.0 60.0 70.1 73.6 75.5 75.5 61.1 17.1 11.9 60.0		50.5	52.9	47.1	59.3	65.4		Ę			- 1			
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191h						65.2	72 .2	76.8	75.5		57.3	49.9		58.6
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1927 **39.6	1925	40.6	148.2	51.6		63.8	77.0		76.8	76.5	55.2	*45.5	38.3	* 59.4
1927 **39.6	1926	38.1	43.0	41.0	55.0	65.7	71.6	76.8	77.0	75.5	60.8	43.8	*41.2	*57.6
1928 35.8 40.4 48.9 55.2 62.6 70.5 76.4 76.3 66.4 60.7 47.6 39.8 56.7 1929 40.6 41.2 53.7 60.7 65.4 71.8 74.9 73.3 70.8 56.4 50.6 41.4 58.4 1930 42.6 47.4 47.4 59.8 66.9 71.6 76.9 74.0 72.4 56.2 48.1 37.0 58.4 1931 40.2 43.5 44.4 56.0 63.5 74.3 78.8 74.0 74.0 74.0 61.3 55.0 49.3 59.5 1932 48.0 48.0 48.0 56.2 65.6 74.2 77.6 76.9 70.4 58.3 44.6 45.4 59.1 1933 46.2 40.8 47.6 56.8 69.4 73.6 76.0 74.0 73.2 60.6 46.3 50.5 59.6 1934 42.7 39.4 48.0 58.1 66.4 73.8 *75.2 *72.7 72.2 *55.9 *47.9 *36.3 *57.4 1935 43.4 43.6 55.2 57.5 *63.0 *68.1 *73.2 *73.0 *67.1 61.4 52.2 33.2 *57.6 1936 34.6 37.6 50.2 55.8 69.0 76.0 78.0 77.4 73.4 61.2 48.0 *45.3 58.9 1937 52.2 39.4 45.2 56.2 66.2 74.4 78.0 77.1 70.7 60.3 50.6 39.9 59.6 1939 42.6 48.0 51.1 56.6 66.0 76.6 75.8 75.0 74.2 62.2 46.2 41.0 59.6 1939 42.6 48.0 51.1 56.6 66.0 76.6 75.8 75.0 74.2 62.2 46.2 41.0 59.6 1944 39.0 33.6 41.2 60.6 68.2 74.0 75.4 67.0 60.6 45.0 45.4 13.0 57.9 1942 35.8 33.2 48.2 59.0 66.9 *73.8 73.0 *67.0 58.7 49.4 39.0 55.9 1941 39.0 33.6 41.2 60.6 68.2 74.0 75.4 67.0 60.6 44.0 45.4 39.0 57.9 1942 35.8 33.2 48.2 59.0 66.9 *73.8 76.8 73.0 67.0 58.7 49.4 39.0 \$50.5 59.6 1944 39.0 39.6 42.8 51.4 65.3 74.9 74.0 75.4 65.8 54.0 43.4 33.0 57.9 1942 35.8 33.2 48.2 59.0 66.9 *73.8 76.8 73.0 67.0 58.7 49.4 39.0 \$50.5 59.1 60.9 71.2 74.7 73.4 71.2 56.6 49.7 49.4 39.0 \$50.5 59.1 60.9 71.2 74.7 73.4 71.2 56.6 49.7 34.0 57.2 55.4 1944 38.9 42.0 42.0 57.0 59.1 60.9 71.2 74.7 73.4 71.2 56.6 49.7 34.0 57.2 55.4 1945 37.0 42.0 57.0 59.1 60.9 71.2 74.7 73.4 71.2 56.6 49.7 34.0 57.2 55.4 1945 37.0 42.0 57.0 59.1 60.9 71.2 74.7 73.4 71.2 56.6 49.7 34.0 57.2 55.4 1945 37.0 42.0 57.0 59.4 65.8 74.9 11.4 58.2 50.5 66.4 40.3 41.4 58.2 55.4 40.3 41.0 51.4 60.9 68.1 73.5 75.9 74.9 71.0 58.9 47.9 41.4 58.2 55.4 40.3 41.0 51.4 60.9 68.1 73.5 75.9 74.9 71.0 58.9 47.9 41.4 58.2 55.4 40.3 41.0 51.4 60.9 68.1 73.5 75.9 74.9 71.0 58.9 47.9 41.4 58.2 55.4 40.3 41.0 51.4 60.9 68.1 73.5 75.9 74.9 71.0 58.9 47.9 41.4 58.2 55.4 40.3 41.4 58.2 55.4 40.3 41.4 58.2 55.4 40.3 41.4 58.2 55.4 40.3 4	1927	*39.6	48.9	49.4	59.3	66.0	71.0		72.2		60.9	51.8	39.9	* 58.8
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1938 40.2 49.0 53.2 60.2 66.5 72.2 75.6 77.1 70.7 60.3 50.6 39.9 59.6 1939 42.6 48.0 51.1 56.6 66.0 76.6 75.8 75.0 74.2 62.2 46.2 41.0 59.6 1940 26.8 42.0 46.4 56.3 63.4 73.1 74.8 74.4 67.0 60.6 46.6 45.0 56.4 1941 39.0 33.6 41.2 60.6 68.2 74.0 76.4 76.8 70.8 64.2 47.4 43.0 57.9 1942 35.8 33.2 48.2 59.0 65.9 *73.8 76.8 73.0 67.0 58.7 49.4 39.0 *56.6 1943 40.0 39.6 42.8 51.4 65.3 74.9 74.0 75.1 65.8 54.6 43.4 38.0 55.4 1944 38.9 43.7 45.9 55.2 68.4 74.0 75.1 74.5 70.3 56.4 45.4 35.9 57.0 1945 37.0 42.0 57.0 59.1 60.9 71.2 74.7 73.4 71.2 56.6 49.7 34.0 57.2 Summary of Period 1921-45 Max. 52.2 49.0 59.4 61.4 69.4 77.0 78.4 77.4 76.5 64.2 55.0 50.5 60.6 Min. 26.8 33.2 41.0 51.4 60.9 68.1 73.2 72.2 65.8 54.6 42.1 33.2 55.4 Mean 40.3 42.6 48.7 57.6 65.4 73.5 75.9 74.9 71.0 58.9 47.9 41.4 58.2 Summary of Record Max. 52.2 52.9 59.4 61.9 70.2 77.0 79.1 80.1 76.6 69.3 55.0 52.9 60.6 Min. 26.8 33.2 39.5 51.4 59.9 68.1 72.4 71.4 65.6 53.0 42.1 33.2 55.4 Mean 41.0 42.2 49.3 57.3 65.8 72.9 75.6 74.8 70.6 59.2 48.4 41.4 58.2														
1939 42.6 48.0 51.1 56.6 66.0 76.6 75.8 75.0 74.2 62.2 46.2 41.0 59.6 1940 26.8 42.0 46.4 56.3 63.4 73.1 74.8 74.4 67.0 60.6 46.6 45.0 56.4 1941 39.0 33.6 41.2 60.6 68.2 74.0 76.4 76.8 70.8 64.2 47.4 43.0 57.9 1942 35.8 33.2 48.2 59.0 65.9 *73.8 76.8 73.0 67.0 58.7 49.4 39.0 *56.6 1943 40.0 39.6 42.8 51.4 65.3 74.9 74.0 75.4 65.8 54.6 43.4 38.0 55.4 1944 38.9 43.7 45.9 55.2 68.4 74.0 75.1 74.5 70.3 56.4 45.4 35.9 57.0 1945 37.0 42.0 57.0 59.1 60.9 71.2 74.7 73.4 71.2 56.6 49.7 34.0 57.2 \$\text{Summary of Period 1921-45}\$ Max. 52.2 49.0 59.4 61.4 69.4 77.0 78.4 77.4 76.5 64.2 55.0 50.5 60.6 Min. 26.8 33.2 41.0 51.4 60.9 68.1 73.2 72.2 65.8 54.6 42.1 33.2 55.4 Mean 40.3 42.6 48.7 57.6 65.4 73.5 75.9 74.9 71.0 58.9 47.9 41.4 58.2 \$\text{Summary of Record}\$ Max. 52.2 52.9 59.4 61.9 70.2 77.0 79.1 80.1 76.6 69.3 55.0 52.9 60.6 Min. 26.8 33.2 39.5 51.4 59.9 68.1 72.4 71.4 65.6 53.0 42.1 33.2 55.4 Mean 41.0 42.2 49.3 57.3 65.8 72.9 75.6 74.8 70.6 59.2 48.4 41.4 58.2														
1940 26.8 42.0 46.4 56.3 63.4 73.1 74.8 74.4 67.0 60.6 46.6 45.0 56.4 1941 39.0 33.6 41.2 60.6 68.2 74.0 76.4 76.8 70.8 64.2 47.4 43.0 57.9 1942 35.8 33.2 48.2 59.0 65.9 *73.8 76.8 73.0 67.0 58.7 49.4 39.0 *56.6 1943 40.0 39.6 42.8 51.4 65.3 74.9 74.0 75.4 65.8 54.6 43.4 38.0 55.4 1944 38.9 43.7 45.9 55.2 68.4 74.0 75.1 74.5 70.3 56.4 45.4 35.9 57.0 1945 37.0 42.0 57.0 59.1 60.9 71.2 74.7 73.4 71.2 56.6 49.7 34.0 57.2 Summary of Period 1921-45 Max. 52.2 49.0 59.4 61.4 69.4 77.0 78.4 77.4 76.5 64.2 55.0 50.5 60.6 Min. 26.8 33.2 41.0 51.4 60.9 68.1 73.2 72.2 65.8 54.6 42.1 33.2 55.4 Mean 40.3 42.6 48.7 57.6 65.4 73.5 75.9 74.9 71.0 58.9 47.9 41.4 58.2 Summary of Record Max. 52.2 52.9 59.4 61.9 70.2 77.0 79.1 80.1 76.6 69.3 55.0 52.9 60.6 Min. 26.8 33.2 39.5 51.4 59.9 68.1 72.4 71.4 65.6 53.0 42.1 33.2 55.4 Mean 41.0 42.2 49.3 57.3 65.8 72.9 75.6 74.8 70.6 59.2 48.4 41.4 58.2														
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1945 37.0 42.0 57.0 59.1 60.9 71.2 74.7 73.4 71.2 56.6 49.7 34.0 57.2 Summary of Period 1921-45 Max. 52.2 49.0 59.4 61.4 69.4 77.0 78.4 77.4 76.5 64.2 55.0 50.5 60.6 Min. 26.8 33.2 41.0 51.4 60.9 68.1 73.2 72.2 65.8 54.6 42.1 33.2 55.4 Mean 40.3 42.6 48.7 57.6 65.4 73.5 75.9 74.9 71.0 58.9 47.9 41.4 58.2 Summary of Record Max. 52.2 52.9 59.4 61.9 70.2 77.0 79.1 80.1 76.6 69.3 55.0 52.9 60.6 Min. 26.8 33.2 39.5 51.4 59.9 68.1 72.4 71.4 65.6 53.0 42.1 33.2 55.4 Mean 41.0 42.2 49.3 57.3 65.8 72.9 75.6 74.8 70.6 59.2 48.4 41.4 58.2	1944				55.2	68.4	74.0	75 .].			56.4	45.4	35.9	57.0
Summary of Period 1921-45 Max. 52.2 49.0 59.4 61.4 69.4 77.0 78.4 77.4 76.5 64.2 55.0 50.5 60.6 Min. 26.8 33.2 41.0 51.4 60.9 68.1 73.2 72.2 65.8 54.6 42.1 33.2 55.4 Mean 40.3 42.6 48.7 57.6 65.4 73.5 75.9 74.9 71.0 58.9 47.9 41.4 58.2 Summary of Record Max. 52.2 52.9 59.4 61.9 70.2 77.0 79.1 80.1 76.6 69.3 55.0 52.9 60.6 Min. 26.8 33.2 39.5 51.4 59.9 68.1 72.4 71.4 65.6 53.0 42.1 33.2 55.4 Mean 41.0 42.2 49.3 57.3 65.8 72.9 75.6 74.8 70.6 59.2 48.4 41.4 58.2	1945	37.0	42.0											
Min. 26.8 33.2 41.0 51.4 60.9 68.1 73.2 72.2 65.8 54.6 42.1 33.2 55.4 Mean 40.3 42.6 48.7 57.6 65.4 73.5 75.9 74.9 71.0 58.9 47.9 41.4 58.2 Summary of Record Max. 52.2 52.9 59.4 61.9 70.2 77.0 79.1 80.1 76.6 69.3 55.0 52.9 60.6 Min. 26.8 33.2 39.5 51.4 59.9 68.1 72.4 71.4 65.6 53.0 42.1 33.2 55.4 Mean 41.0 42.2 49.3 57.3 65.8 72.9 75.6 74.8 70.6 59.2 48.4 41.4 58.2	Summa	ry of												
Min. 26.8 33.2 41.0 51.4 60.9 68.1 73.2 72.2 65.8 54.6 42.1 33.2 55.4 Mean 40.3 42.6 48.7 57.6 65.4 73.5 75.9 74.9 71.0 58.9 47.9 41.4 58.2 Summary of Record Max. 52.2 52.9 59.4 61.9 70.2 77.0 79.1 80.1 76.6 69.3 55.0 52.9 60.6 Min. 26.8 33.2 39.5 51.4 59.9 68.1 72.4 71.4 65.6 53.0 42.1 33.2 55.4 Mean 41.0 42.2 49.3 57.3 65.8 72.9 75.6 74.8 70.6 59.2 48.4 41.4 58.2	Max.	52.2	49.0	59.4	61.4	69.4	77.0	78 .ls	77.4	76.5	64.2	55.0	50.5	60.6
Mean 40.3 42.6 48.7 57.6 65.4 73.5 75.9 74.9 71.0 58.9 47.9 41.4 58.2 Summary of Record Max. 52.2 52.9 59.4 61.9 70.2 77.0 79.1 80.1 76.6 69.3 55.0 52.9 60.6 Min. 26.8 33.2 39.5 51.4 59.9 68.1 72.4 71.4 65.6 53.0 42.1 33.2 55.4 Mean 41.0 42.2 49.3 57.3 65.8 72.9 75.6 74.8 70.6 59.2 48.4 41.4 58.2														
Summary of Record Max. 52.2 52.9 59.4 61.9 70.2 77.0 79.1 80.1 76.6 69.3 55.0 52.9 60.6 Min. 26.8 33.2 39.5 51.4 59.9 68.1 72.4 71.4 65.6 53.0 42.1 33.2 55.4 Mean 41.0 42.2 49.3 57.3 65.8 72.9 75.6 74.8 70.6 59.2 48.4 41.4 58.2														
Max. 52.2 52.9 59.4 61.9 70.2 77.0 79.1 80.1 76.6 69.3 55.0 52.9 60.6 Min. 26.8 33.2 39.5 51.4 59.9 68.1 72.4 71.4 65.6 53.0 42.1 33.2 55.4 Mean 41.0 42.2 49.3 57.3 65.8 72.9 75.6 74.8 70.6 59.2 48.4 41.4 58.2					2100	-> 04	1000	1/0/	140/	, 200	, , ,	4107	04	
Min. 26.8 33.2 39.5 51.4 59.9 68.1 72.4 71.4 65.6 53.0 42.1 33.2 55.4 Mean 41.0 42.2 49.3 57.3 65.8 72.9 75.6 74.8 70.6 59.2 48.4 41.4 58.2					61.9	70.2	77.0	79.1	80.1	76.6	69.3	55.0	52.0	60-6
Mean 41.0 42.2 49.3 57.3 65.8 72.9 75.6 74.8 70.6 59.2 48.4 41.4 58.2														
					7107	0,00	153	17.0	14.0	10.0	2702	40.4	4-04	, , , , , ,

*Interpolated

				Highe		mperati	are - 1	Hot Sp	rings,	N.C.			
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug	Sept.	Oct.	Nov.	Dec.	Highest
1887	Camagan Cam					90	91	88	87	79	72	65	
1888	71	66	73	81	88	94	92	102	82	72	75	60	102
1889	60	69	76	88	85	87	90	84	86	77	70	72	90
1890	73	78	76	84	86	93	93	86	87	81	79		93
1902	72	63	76	85	89	95	93	92	87	79	75	65	95
1903	69	71	76	83	90	89	91	90	86	87	86	59	91
1904	65 60	70 58	75	79 77	-86 85	87 88	92 90	- 87	89	82	*71	· 70	92
1905 1906	67	69	74 70	87	90	93	90	89 92	88 90	88 81	70 82	62	90
1907	74	71	88	86	90	91	98	92	93	88		69	93
1908	62	69	90	88	92	96	92	94	89	83	78 78	72 73	98 96
1909	76	78	72	89	90	90	89	92	86	82	78	71	92
1910	70	69	86	88	88	87	87	89	87	86	76	70	89
1911	77	78	86	85	92	96	95	93	92	84	76	72	96
1912	65	71	84	85	87	88	90	92	93	86	75	70	93
1913	73	72	80	82	89	90	97	94	89	85	76	74	97
1914	79	68	74	88	93	97	96	91	Comp Attaches	85	74	70	
1915	64	72	62	88	85	87	95	93	90	84	78	63	95 94
1916	75	72	79	88	94	94	92	92	.93	88	78	68	94
1917	77	78	83	86	88	96	94	94	89	83	74	69	96
1918	60	83	83	82 88	94	94	91	100	88	85	75	72	100
1919	67 72	62 63	78		90	95 06	101	98	97	92 91.	75	69	101
1920 1921	66	74	77 88	90	90	96 96	94 96	_90 95	89 93	84 82	75	60	96
1922	69	77	81	89	91	95	94	91	94	89	79 81	78 70	96 95
1923	70	72	81	85	85	94	96	93	91	86	66	75	96
1924	63	66	78	82	89	96	94	94	93	83	75	75	96
1925	61	73	81	95	93	98	101	102	101	84		62	102
1926	64	72	74	82	93	93	102	95	90	89	67	Description Com-	102
1927	400,000 mm	81	83	88	89	92	93	91	95	88	80	75	95
1928	72	68	86	80	85	90	93	92	90	88	82	60	93
1929	75	68	87	87	88	93	93	92	93	78	80	72	93
1930	75	80	73	85	89	98	100	100	93	80	77	61	100
1931	66	64	68	82	89	101	99	94	95	87	77	78	101
1932	77 70	81 7 4	79 79	82 84	86 91	94	96	101	97	81	66	68	101
1933 1934	66	65	78	83	92	99 92	95	93	89 90	Carl (see CE)			99
1935	74	74	82	87	<i></i>	<i></i>			70	88	83	61	
1936	68	79	78	85	94	105	con desc	98	94	83	83		
1937	78	75	77	89	92	93	97	94	94	88			
1938	72	77	84	88	91	92	94	94	94	91	81	71	94
1939	75	77	83	87	95	96	96	95	98	94	75	73	98
1940	62	72	83	91	93	95	99	93	93	86	76	68	99
1941	61	57	70	90	94	93	93	94	93	93	75	70	94
1942	67	67	82	87	91		92	93	89	80	75	67	
1943	75	70	77	83	88	93	93	97	96	82	77	68	97
1944	68	76	82 81.	83	92	95	96	96	92	84	73	69	96
1945	ry of	75 Period	84 1 1921-	85 J.E	87	94	92	92	91	81	79	60	94
Max.	78	81	88	95	95	105	102	102	101	94	83	78	105
Min.	57	57	68	80	85	90	92	91	89	78	66	60	93
Mean	68.8	72.6	79.9	86.0	90.3	95.1	95.6			85.4	76.5	69.1	97.1
1		Record		0000	, 0 0 0	1701	//80	74.01	1000	0704	1000	0/01	/ 10-
Max.	79	83	90	95	95	105	102	102	101	94	86	78	105
Min.	57	57	62	77	85	87	87	84	82	72	66	59	89
Mean	69.1	71.6	79.1	85.7	89.8	93.5	94.2	93.3	91.2	84.5	76.2	67.5	95.9

					_	eratur		ot Spri		. U.			
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Lowest
1887						48	60	49	39	31	12	14	
1888	14	9	21	33	34	47	60	58	34	32	25	17	9
1889	17	11	27	33	31	40	60	53	41	26	21	22	11
1890	18	26	18	33	41	54	61	50	43	30	25		
1902	15	11	18	30	40	50	56	52	40	33	32	12	11
1903	12	9	27	29	43	44	54	61	42	26	16	10	9
1904	12	12	26	29	40	53	55	54	48	29	25	18	12
1905	4	-4	31	31	50	50	57	56	52	32	28 "	21	-4
1906	16	12	20	30	33	56	62	62	62	27	22	8	8
1907	18	19	32	21	36	45	56	50	45	28	20	15	15 5 3
1908	14	5	29	26	44	48	60	56	38	31	20	19	5
1909	6	5	24	29	32	56	52	54	38	27	22	3	3
1910	13	11	19	32	35	43	56	58	48	21	19	12	11
1911	11	19	18	24	35	52	51	54	61	37	18	15	11
1912	2	1	18	29	43	47	55	50	47	32	16	15	1 1
1913	21	14	18	34	35	44	52	55	39	32	16	16	14
1914	16	16	12	25	41	54	52 55	57	43	24	6	6	6
1915	20	20	19	22	45	50	53	54	44	29	22	17	17
1916	0	12	17	25	40	51	60	55	40	32	15	8	Ö
1917	10	-1	15	26	36	43	54	47	44	22	14	-12	-12
1918	1	10	28	29	32	46	50	53	35	38	26	17	1
1919	4	16	25	28	44	55	53	53	45	52	19	13	4
1920	2	9	4	23	35	49	55	58	46	24	18	18	2
1921	22	25	26	29	34	57	60	55	54	27	27	22	22
1922	9	6	25	30	42	50	60	51	47	29	16	25	6
1923	23	8	15	18	31	45	52	51	47	32	21	22	8
1924	2	16	21	26	39	51	58	55	41	24	21	13	2
1925	19	19	10	24	37	55	54	52	56	25	16	2	2
1926	15	16	0	26	39	44	52	58	61	27	20		
1927	<u></u>	27	18	28	35	55	55	52	40	33	22	12	
1928	- 2	16	21	24	38	45	56	61	34	31	18	18	- 2
1929	15	15	19		39		57 57	51			8		
1930	8	15	18	33 29		46 42	52	21 47	44	31 27		10	8
1931	11	19	19	34	39 35	43	61	50	45	27	13 25	15	
1932	21	21	13	29	38		50	20	40			25	11
		1				53		55	41	27	19	21	13
1933	20	0	20	34	42	70	52	57	14				
1934	4	9	14	26	42	52	62	57	47				
1935	12 2	10	22	27	30	1.1.			10	27	15	66	6
1936		1 16	26	23	39	74	1.7	50	49	33	12		
1937	23	22	13	26	39	53	47	59	45	214	77	7.3	77
1938	14		19	30	44	51	54	56	41	30	11	13	11
1939	. 19	10	20	26	34	56	51	53	48	27	18	17	10
1940	- 6	8	14	24	29	47	49	52	35	35	18	18	-6
1941	10	14	17	40	39	55	57	56	47	31	18	15	10
1942	- 3	7	25	23	38		59	53	35	24	21	10	- 3
1943	8	5	3	5Ħ	36	57	58	50	37	23	17	4	3 5 6
1944	17	5	16	25	37	48	52	52	48	27	26	10	5
1945	15	6	27	28	37	40	56	47	48	28	22	6	6
Summa		Period			-, ,								
Max.	23	27	27	40	44	57	62	61	61	35	27	25	22
Min.	-6	0	0	18	29	710	47	47	34	23	8	2	- 6
Mean	11.6	12.6	17.6	27.4	37.6	49.1	55.0	53.3	44.8	28.2	18.4	14.2	6.3
	ry of												
Max.	23	27	32	40	50	57	62	62	62	52	32	25	22
Min.	- 6	-4	0	18	29	40	47	47	34	21	6	-12	-12
Mean	11.4	11.9	19.3	27.8	38.0	49.0	55.5	53.8	44.4	29.2	19.1	13.5	6.4

Precipitation in Waynesville, Haywood County, North Carolina: Monthly and annual (in inches and hundredths)

			Carol	ina: 1	Monthly	y and a	annual	(in ir	nches a			ıs)	
Year	Jan.	Feb	Mar.	Apr.	May	June	July		Sept.	Oct.	Nov.		Annual
1894	* 3.30	%6.10	*2.40	%2 。10	3.58	3.17	3.84	4.37	1.88	2.63	0.29	5.29	38.95*
1895	6.97	1.86	5.92	3.09	5.97	4.46	4.15	7.05	.64	2.02	2.30	3 . 30	47.73
1896	1.91	4.31	3.06	1.81	6.11	5.14	12.05	.79	4.14	.71	6.20	.79	47.02
1897	2.93	5.70	9.23	5.08	۰99	5.89	4.89	2.73	.19	1.67	1.33		44.30
1898	4.36	.50	5.48	3 . 95	1.96	3.11	5.02	7.35	3 .66	5.45	2.42		45.52
1899	3.52	10.73	13.01	3.00	3.01	2.11	2.66	3.27	2.60	2.89	1.19		51.50
1900	2.38	6.97	6.00	6.41	1.01	7.64	3 • 55	2.25	2.49	2.12	3.57		48.47
1901	4.83	1.40	7.07	6.12	9.63	4.05	2.94	10.80	2.31	.52	.61		59.84
1902	2.12	7.99	4.57	2 .40	2.81	3.62	3.00	1.43	5.55	1.34	3.36		40.71
1903	1.73	8.65	7.85	4.69	1.90	4.27	3.05	4.75	.80	1.65	2.75		44.34
1904	2.55	2.15		3.15	2.00	* 2.90	2.17	3.12	،39	T	2.15		26.66*
1905	*3.50	* 5.60		3.60	5.66	3.86		5.83	1.46	2.64	.84		48.06*
1906	7.83	1.53		3.15	4.52	6.50	7.38	4.84	5.82	3 .43	4.04		57.30
1907	.70	2.36		2.94	4.56	4.60	7.08	3.93	5.90	۰79	4.52		44.88
1908	4.67	4.56	5.02	4.55	4.43	1.83	4.39	3.74	1.73	7.81	1.02		50.21
1909	1.60	6.35	7.26	1.82	7.81	8.19		4.17	2.58	2.75	.10		52.36
1910	3.34	3.39		2.78	5.58	5.69	5.43	6.74	1.91	2.07	1.04		43.90
1911	3.98	3.20		7.76	.98	1.82	5.03	3.35	2.34		3.88		44.64
1912	4.01	5.63		5.80	3.58			4.37	3.06		2.21		51.34
1913	4.64	4.00		2.72	4.92	3.80		2.57	2.95		1.28		45.64
1914	2.16	4.23		3.17	1.45	4.00		3.10	1.69		3.17		44.39
1915	5.51	4.47		1.94	5.36			4.95	*4.70				53.93*
1916	*2.90		* 2.20	*1 .90			*12.40	1.66	.47	*3.40	1.52		43.60*
1917	2.26			.67	1.48			3.17	*6.00				31.30*
1918	*6.30					*5.80				*11.20	*2.40		55.33*
1919	*4.90				* 3.70			1.55	.51	3.11	1.97	4.11	
1920	4.40	3.36		8.46			2.94	9.25	4.50	.52	3.52	0.15	57.35
1921	4.19	5.24		3.98		*4.20	3.86	*5.40	2.23				43.98* 45.93*
1922	*5.00		*7.40	3.75	4.15 * 7.50	2.87		*2.60 3.05	1.43	.56° .56°	2.06		43.68*
1923 1924	*4.10	%3,30 3,82		4.19	3.65	*3°20 3°35	5.48	1.84	5.73	1.30		6.75	
1925	6.31 4.14	2.15			2.45	3.58		.43	1.49			1.38	
1926	* 5.30	*3.30		2.03	2.04	3.43	*4.40	4.30	3.59		1, 16		45.49*
1927	*1.30	*4.10			3.13	3.32	3.08	6.16	1.47		2.02	8-69	43.89*
1928	2.92	1.03			7.59				* 6.10				56.07*
1929		* 5.70		4.53	6.27	2.70		1.35	5.59				53.51*
1930	2.93	1.83			4.17	2.50		2.89	5.72		3.36		35.06
1931	1.59	2.08		6.36	3.85	4.52	6.96	3.73	1.25	1.35	1.25		43.92
1932	5.34	5.10		1.81	2.05	1.47	3.74	5.54	2.40				55.86
1933	2.47	5.74		2.42	4.55		3.07	6.26	3.24		1.67		
1934	3.17	3.20		1.66	3.97	6.34		4.18	1.51	3.73	3.27		45.51
1935	3.32	3.97	6.02	4.15	3.09	1.79	5.65	4.71	.89		5.04		42.85
1936	12.11	6.43	7.63	6.19	.86	2.93	5.87	2.63	5.39	4.16	1.29		60.59
1937	9.43	3.12	1.63	5.09	2.82	2.98		7.09	1.54	5.43	.72		49.13
1938	3.39	1.45	5.93	2.88	4.44	3.67	6.88	2.27	2.17	.22	5.12	1.71	
1939	5.20	8.42	4.83	2.69	1.61	2.24	6.20	3.51	.69		1.14		39.91
1940	2.50	5.10		3.10	1.68		5.74		.62	1.30	2.40	2.17	42.89
1941	3.11	*.96	* 3.97	*2.13	*1.06	*4.20	%10.72	*3.03	* .88	2 .50	1.52		37.38₩
1942	2.28	4.42	5.18	1.33	7.60	5.05	9.84	8.12	*4.36				58.85*
1943	5.15	4.53	6.73	* 3.16	4.50	4.65	5.12	* 1.98			*1.57		43.50*
1944	2.86	8.55	7.63	4.17	5.86	3.08	5.52	1.77	3.88		3.26		52.95
1945	2.23	6.29	4.25		2.88	3.12	6.62	3 . 65	6.20	3.92	3.82	4.40	53.31
	ry of l		1921-										
Max.	12.11	8.55		6.36			*10.72	11.42					60.59
Min.	1.30	* .96		1.33	.86			.43	.62		.72		29.98
Mean	4.17	4.17	4.84	3.41	3.83	3.50	5.54	4.28	2.91	2.65	2.39	4.21	45.94
	ry of		30 == 1			<u> </u>	3015	35 16	7 00	33.00	(00	13.00	KO 50
Max.	12.11			8.46 .67	9.63	8.19	12.40	11.42	6.20	11.20	6.20 .10		60.59
Min 。 Mean	.70 3.92	.50 4.26	5.08	3.55	.86 3.86	1.47 4.01	5.16	4.29	.19 2.81	2.78	2.33	4.17	
	Tntom			اررور	2.00		76	402/	_ 501				

Average Temperature - Waynesville, N. C.

					Aver	age Ter	mperati	ure - I	Naynes	ville,	N.C.					
1895 5.5 27.1	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Auge	Sept	Octo	Nov.	Dec.	Average		
1895 35,5 27,1 11,16 53,2 60,3 68,3 70,2 70,4 67,8 19,1 16,8 38,2 52,6 1896 36,0 36,1 11,2 58,3 67,4 67,9 70,7 72,1 61,5 53,0 50,0 37,7 55,0 1897 33,1 11,9 50,8 53,2 58,2 68,8 69,7 66,0 62,3 51,9 15,7 11,3 51,0 1898 39,8 36,2 52,1 17,8 63,5 70,4 70,9 70,3 65,1 52,5 12,3 36,5 51,0 1899 37,9 35,1 13,6 52,6 61,1 68,5 71,6 70,5 61,2 55,2 16,7 36,6 53,8 1900 35,3 36,1 13,6 52,6 61,1 68,5 71,6 70,5 61,2 55,2 16,7 36,6 53,8 1900 37,2 31,2 15,8 15,6 59,4 67,9 71,1 71,4 67,3 38,4 14,0 37,5 54,0 1902 37,2 31,2 15,8 15,6 59,4 67,9 71,1 72,4 63,5 53,6 54,2 14,9 55,0 1903 37,4 12,3 54,3 54,8 54,7 63,7 63,8 70,2 69,8 63,0 57,8 54,2 14,9 55,0 1903 37,4 12,3 54,3 54,8 63,7 63,8 70,2 69,8 63,0 51,9 15,2 36,4 52,4 1905 33,3 35,0 12,7 17,6 62,5 66,3 69,9 70,6 67,4 51,9 15,2 36,4 52,4 1905 33,3 35,0 12,7 17,6 62,5 66,3 69,9 71,9 68,3 53,2 15,3 11,4 51,7 17,6																
1896 36.0 38.1 kl., 2 58.3 67.4 67.9 70.9 72.1 64.5 53.0 50.0 37.7 55.0 1898 39.8 36.2 52.1 kg., 8 63.6 57.0 kg., 7 65.0 62.3 54.9 kg., 57. kg., 3 54.0 1898 37.9 35.1 kg., 0 51.3 65.1 69.0 69.6 70.5 61.2 55.2 kg., 3 36.5 54.0 52.5 kg., 3 1899 37.9 35.1 kg., 0 51.3 65.1 69.0 69.6 70.5 61.2 55.2 kg., 3 36.5 54.0 kg., 3 54.0 19.0 35.3 36.1 kg., 6 52.6 61.1 68.5 71.8 71.kg., 7 1.1 kg., 2 58.kg., kg., 2 51.0 kg., 2		1		i e	1						1 .			1 1		
1897 33.1 11.9 50.8 53.2 58.2 68.8 69.7 66.0 62.3 51.9 15.7 11.3 51.0 1898 39.8 36.2 52.1 17.8 63.5 70.1 70.9 70.3 65.1 52.5 12.3 36.5 53.6 1899 37.9 35.1 187.0 51.3 65.1 69.0 69.6 70.5 61.2 55.2 16.7 36.6 53.8 1900 37.0 31.2 15.8 15.6 59.1 67.9 71.8 71.1 72.1 61.2 55.2 16.7 36.6 53.8 1900 37.0 31.2 15.8 15.6 59.1 61.8 57.9 71.1 72.1 72.1 61.5 57.8 51.1 38.9 36.0 51.6 51.0 1900 37.0 31.8 15.9 51.1 61.5 67.9 71.1 72.1 72.1 63.5 57.8 51.2 51.2 51.9 55.0 1901 37.1 12.3 51.3 51.8 63.7 63.8 70.2 69.8 63.0 51.8 12.7 31.3 51.0 1901 33.3 35.0 12.7 17.6 62.5 66.3 69.9 70.6 67.1 51.9 15.2 36.1 52.1 1905 33.3 35.0 12.7 17.6 62.5 68.1 71.1 63.0 61.8 51.9 15.2 36.1 52.1 1906 10.3 37.9 55.1 18.6 59.3 68.1 71.1 63.0 61.8 51.9 15.2 36.1 52.1 1907 16.7 39.9 55.1 18.6 59.3 61.3 70.8 69.1 63.5 50.6 18.5 38.2 18.5 11.1 51.7 1909 11.5 13.0 11.7 56.6 68.9 66.7 67.9 71.3 66.0 51.8 19.9 28.6 51.3 19.1 23.5 11.3 15.1 56.6 66.8 69.6 66.7 69.5 66.0 51.8 19.9 28.6 51.3 19.1 25.5 11.3 16.1 51.3 63.7 70.7 69.9 66.6 56.0 10.9 27.0 52.1 1911 25.5 11.3 16.1 51.3 63.1 63.0 63.1 63.2 52.2 18.9 19.1 25.5 11.3 16.1 51.6 62.3 63.7 70.7 69.9 66.6 65.0 66.0	-				77.2									The second secon		
1899 39.8 36.2 52.1 17.8 63.5 70.1 70.9 70.3 65.1 52.5 12.3 36.5 51.0 1899 37.9 35.1 17.0 51.3 65.1 69.0 69.6 70.5 61.2 55.2 16.7 36.6 53.8 1900 37.0 31.2 15.8 15.6 59.1 67.9 71.1 72.1 63.5 51.8 11.0 37.5 51.0 1903 37.1 12.5 51.3 51.8 55.6 51.5 67.9 71.1 72.1 63.5 57.8 51.3 12.7 31.3 51.0 1903 37.1 12.5 51.3 51.3 51.8 63.7 63.8 70.2 69.8 63.0 57.8 51.2 11.9 55.0 1903 37.1 12.5 51.3 51.8 63.7 63.8 70.2 69.8 63.0 51.3 12.7 31.3 51.0 1904 33.3 35.0 12.7 17.6 62.5 66.3 69.0 71.9 68.3 53.2 15.2 36.1 52.1 1905 10.3 37.9 11.5 51.7 60.5 68.8 69.0 71.9 68.3 53.2 15.3 11.1 51.7 1907 14.6 39.9 55.1 18.6 59.3 61.3 70.2 69.8 63.0 63.8 52.9 11.5 53.1 11.1 51.7 1908 31.1 31.0 53.6 56.9 62.5 67.3 71.9 71.6 63.5 50.6 61.6 53.5 51.9 1910 31.1 30.7 50.2 53.8 58.1 65.1 65.1 65.6 66.6 66.0 66.6 65.0 60.9 32.0 52.1 1911 12.5 14.1 30.1 50.2 53.8 58.1 65.1 65.1 65.0 66.6 56.0 66.6 56.0 60.9 32.0 52.1 1911 12.5 14.1 39.0 16.8 52.3 61.2 61.0 71.0 69.9 60.6 56.0 60.9 32.0 52.1 1911 12.5 14.1 39.0 16.8 52.3 61.2 61.0 71.0 69.9 60.6 56.0 60.9 32.0 52.1 1912 31.1 31.1 51.5 56.6 62.8 66.5 71.1 71.6 63.2 52.9 16.5 39.5 55.1 1913 14.1 39.0 16.8 52.3 61.9 61.0													1 .			
1899 37.9 35.1 147.0 51.3 65.1 69.0 69.0 70.5 61.2 55.2 16.7 36.6 53.8 1900 37.0 31.2 15.8 15.6 59.1 67.9 71.6 69.6 61.9 51.1 38.9 36.0 51.5 1902 37.2 31.8 15.9 51.1 61.5 67.9 71.1 72.1 63.5 57.8 51.2 14.9 55.0 1903 37.4 12.3 51.3 51.8 63.7 63.8 70.2 69.8 63.0 51.3 12.7 31.3 51.0 1901 37.3 35.0 12.7 17.6 62.5 66.3 69.9 70.6 67.1 51.9 15.2 35.1 1905 51.5 55.3 63.9 68.1 71.1 68.0 61.8 51.9 15.2 36.1 1906 10.3 37.9 11.5 51.7 60.5 68.8 69.0 71.9 68.3 53.2 15.3 11.1 51.7 1907 16.7 39.9 55.1 18.6 59.3 61.3 70.2 60.1 63.5 50.6 11.5 32.2 51.1 1908 31.1 31.0 53.8 56.9 62.5 67.3 71.9 71.6 63.8 52.1 18.9 28.6 51.3 1910 31.1 30.7 50.2 53.6 58.1 65.1 70.9 69.9 66.6 56.0 69.9 32.0 52.1 1911 12.5 11.3 16.6 15.3 30.7 70.7 69.9 71.3 70.7 60.1 1912 33.1 33.1 15.1 56.6 62.8 66.5 71.1 69.5 68.3 56.8 12.2 39.5 53.7 1913 11.1 39.0 16.8 52.3 61.9 68.0 69.0 69.9 66.6 56.0 10.9 32.0 52.1 1913 11.1 39.0 16.8 52.3 61.9 68.0 69.0 69.9 66.6 56.0 10.9 32.0 52.1 1913 11.1 39.0 16.8 52.3 61.9 63.0 63.7 70.7 60.1 1914 12.5 14.3 16.6 57.3 67.7 70.7 69.9 71.3 70.7 60.1 1915 37.5 10.7 39.5 55.5 62.3 73.2 71.7 71.6 63.0 56.1 12.9 13.0 56.1 1916																
1900 35,3 36,1 13,6 52,6 61,1 68,5 71,8 71,6 67,6 61,9 51,1 38,9 36,0 51,6 1902 37,2 31,8 15,9 51,1 61,5 67,9 71,4 72,4 63,5 57,8 51,2 11,9 55,0 1903 37,4 12,3 51,3 51,8 63,7 63,8 70,2 69,8 63,0 51,3 12,7 31,3 51,0 1904 33,3 35,0 12,7 17,6 62,5 66,3 69,9 70,6 67,4 51,9 15,2 36,1 52,4 1905 37,9 11,5 51,7 60,5 68,8 69,0 70,6 67,4 51,9 15,2 36,1 52,4 1905 31,3 31,0 53,8 56,9 62,5 67,3 71,9 70,6 68,8 51,9 17,6 37,3 71,9 16,7 37,9 55,1 18,6 59,3 68,3 70,8 68,1 63,4 53,2 15,3 11,4 51,7 1907 16,7 37,9 55,1 18,6 59,3 68,3 70,8 68,1 63,8 52,4 18,3 12,2 51,9 1909 11,5 13,0 14,7 56,6 60,8 69,6 68,7 69,5 61,0 51,8 19,9 28,6 51,9 1909 11,5 13,0 14,7 56,6 60,8 69,6 68,7 69,5 61,0 51,8 19,9 28,6 51,9 1909 11,5 13,0 14,7 56,6 60,8 69,6 68,7 69,5 61,0 51,8 19,9 28,6 51,1 1910 11,1 13,0 75,0 50,2 53,8 58,1 65,1 70,9 69,9 66,6 56,8 12,2 39,5 55,0 1911 12,5 14,3 14,5 15,6 66,2 66,8 67,5 71,9 69,2 71,3 70,7 60,4 12,9 13,0 56,1 1911 14,5 13,0										65.4		42.3				
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1911 12.5 14.3 16.1 51.3 63.7 70.7 69.9 71.3 70.7 60.1 12.9 13.0 56.1 1912 33.1 33.1 15.1 56.6 62.8 66.5 71.1 69.5 68.3 56.8 12.2 39.5 53.7 1913 14.1 39.0 16.8 52.3 61.9 68.0 73.5 71.9 63.2 52.9 14.5 39.5 55.0 1914 38.8 35.6 12.3 55.5 62.3 73.2 71.7 71.6 64.8 57.5 13.4 66.5 51.1 1915 37.5 10.7 35.9 51.3 64.2 66.6 70.3 68.9 1916 66.6 70.3 68.9 148.5 1918 67.7 70.9 62.2 58.8 14.3 14.0 1919 36.8 67.7 70.9 62.2 58.8 14.3 14.5 1920 39.0 35.8 141.3 51.5 59.8 66.7 69.6 69.0 14.5 39.1 1921 39.7 13.6 56.2 56.0 59.0 873.2 71.8 872.6 70.1 53.8 50.1 813.3 857.5 1922 39.7 13.6 56.2 56.0 59.0 873.2 71.8 872.6 70.1 53.8 50.1 813.3 857.5 1923 34.2 35.6 11.1 53.2 57.6 70.2 69.2 70.6 60.5 52.0 15.8 16.1 855.1 1924 31.2 35.6 11.1 53.2 57.6 70.2 69.2 70.6 60.5 52.0 15.8 16.1 855.1 1925 37.7 13.9 16.6 57.0 58.0 68.8 71.2 68.2 70.0 53.8 14.8 10.3 52.5 1926 *37.1 *41.8 10.1 52.1 61.0 66.2 *71.0 71.2 69.3 55.6 11.8 10.3 52.5 1928 36.1 39.1 *16.6 57.0 58.0 68.8 71.2 68.2 70.0 53.8 14.8 10.3 52.5 1928 36.1 39.1 *16.6 57.0 58.0 68.8 71.2 68.2 70.0 53.8 14.8 10.3 52.5 1928 36.1 39.1 *16.6 57.0 58.0 68.8 71.2 68.2 70.0 53.8 14.8 10.3 52.5 1928 36.1 39.1 *16.6 57.0 58.0 68.8 71.2 68.2 70.0 53.6 11.0 37.2 51.7 1926 *37.1 *11.8 10.1 52.6 60.5 68.8 71.2 68.2 70.0 53.6 11.3 53.3 1928 36.1 39.1 31.4 31.5 55.6 63.6 66.6 73.8 68.3 55.0 17.8 39.0 855.7 1931 36.6 10.5					53.8	58.1								52.4		
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1930	1929	*39.0	*38.6	*50.7	57.2	63.5		71.8		67.0	55.0	17.8	39.0	*55.7		
1931 36.6 40.5 41.0 52.6 60.5 68.8 73.1 68.8 68.6 57.0 51.9 47.9 55.6 1932 47.4 47.4 43.5 55.2 61.2 69.0 73.2 70.4 64.6 55.4 44.1 45.2 56.4 1933 45.1 41.0 48.0 54.0 65.8 68.8 70.7 69.3 68.8 55.8 45.8 47.8 56.7 1934 43.0 35.3 47.8 55.2 61.6 72.0 73.6 70.0 65.6 53.6 44.8 36.0 54.9 1935 38.4 37.3 49.2 51.9 62.0 66.6 *74.2 *73.9 64.1 54.9 47.0 28.4 *54.0 1936 31.4 34.5 46.9 52.4 63.7 70.5 74.0 71.8 67.1 57.0 42.3 39.2 54.2 1937 50.0 36.3 41.2 51.9 62.3 69.5 69.6 70.6 62.7 49.8 39.4 35.1 53.2 1938 35.2 43.6 49.4 54.5 60.9 66.2 70.4 71.6 63.8 51.6 43.7 35.5 53.9 1939 36.3 41.2 45.4 49.6 59.5 70.4 69.8 68.2 64.6 54.7 39.5 35.4 53.1 1940 20.8 34.4 41.2 51.2 58.7 67.8 69.6 68.6 59.1 53.3 44.3 42.4 54.0 1941 37.0 *33.6 *40.6 *57.1 *63.8 *71.1 *74.7 *74.7 *69.4 *62.7 45.8 41.7 *56.0 1941 38.4 44.1 47.4 54.0 64.9 69.9 68.6 70.0 65.0 54.6 45.1 37.5 55.0 1943 38.8 43.6 55.0 *57.8 59.0 67.6 71.1 70.0 67.2 54.2 47.0 32.2 *55.3 Max. 50.0 48.5 56.2 58.5 65.8 73.6 74.7 74.7 70.7 65.1 54.2 47.9 57.5 Min. 20.8 33.0 44.6 55.7 65.6 55.1 63.8 67.7 67.6 59.1 48.8 39.4 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 51.5		1930 40.6 43.1 43.2 55.6 63.6 66.6 73.8 68.3 68.0 52.4 43.5 34.0 54.6 1931 36.6 40.5 41.0 52.6 60.5 68.8 73.1 68.8 68.6 57.0 51.9 47.9 55.6														
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1938 35.2 43.6 49.4 54.5 60.9 66.2 70.4 71.6 63.8 51.6 43.7 35.5 53.9 1939 36.3 41.2 45.4 49.6 59.5 70.4 69.8 68.2 64.6 54.7 39.5 35.4 53.1 1940 20.8 34.4 41.2 51.2 58.7 67.8 69.6 68.6 59.1 53.3 44.3 42.4 51.0 1941 37.0 *33.6 *40.6 *57.1 *63.8 *71.1 *74.7 *74.7 *69.4 *62.7 45.8 41.7 *56.0 1942 35.5 33.0 44.6 56.0 *63.0 73.6 74.2 73.9 *66.3 55.0 47.1 34.8 54.7 1943 39.6 40.4 42.6 50.9 64.4 71.2 70.0 *74.7 *63.7 *53.5 *43.2 39.4 *54.5 1944 38.4 44.1 47.4 54.0 64.9 69.9 68.6 70.0 65.0 54.6 45.1 37.5 55.0 1945 38.8 43.6 55.0 *57.8 59.0 67.6 71.1 70.0 67.2 54.2 47.0 32.2 *55.3 Summary of Period 1921-45 Max. 50.0 48.5 56.2 58.5 65.8 73.6 74.7 74.7 70.4 62.7 51.9 47.9 57.5 Min. 20.8 33.0 40.4 49.6 57.6 66.2 68.6 67.6 59.1 49.8 39.4 28.4 51.0 Mean 38.4 40.3 46.2 54.2 61.6 69.1 71.7 70.8 63.5 54.9 45.3 39.2 54.8 Summary of Record Max. 50.0 48.5 56.2 58.5 67.4 73.6 74.7 74.7 70.7 65.1 54.2 47.9 57.5 Min. 20.8 27.1 35.9 45.6 55.1 63.8 67.7 67.6 59.1 48.5 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 54.5								69.6		62.7	49.8	39.4	35.1	53.2		
1939 36.3 41.2 45.4 49.6 59.5 70.4 69.8 68.2 64.6 54.7 39.5 35.4 53.1 1940 20.8 34.4 41.2 51.2 58.7 67.8 69.6 68.6 59.1 53.3 44.3 42.4 51.0 1941 37.0 *33.6 *40.6 *57.1 *63.8 *71.1 *74.7 *74.7 *69.4 *62.7 45.8 41.7 *56.0 1942 35.5 33.0 44.6 56.0 *63.0 73.6 74.2 73.9 *66.3 55.0 47.1 34.8 54.7 1943 39.6 40.4 42.6 50.9 64.4 71.2 70.0 *74.7 *63.7 *53.5 *43.2 39.4 *54.5 1944 38.4 44.1 47.4 54.0 64.9 69.9 68.6 70.0 65.0 54.6 45.1 37.5 55.0 1945 38.8 43.6 55.0 *57.8 59.0 67.6 71.1 70.0 67.2 54.2 47.0 32.2 *55.3 Summary of Period 1921-45 Max. 50.0 48.5 56.2 58.5 65.8 73.6 74.7 74.7 70.4 62.7 51.9 47.9 57.5 Min. 20.8 33.0 40.4 49.6 57.6 66.2 68.6 67.6 59.1 49.8 39.4 28.4 51.0 Mean 38.4 40.3 46.2 54.2 61.6 69.1 71.7 70.8 63.5 54.9 45.3 39.2 54.8 Summary of Record Max. 50.0 48.5 56.2 58.5 67.4 73.6 74.7 74.7 70.7 65.1 54.2 47.9 57.5 Min. 20.8 27.1 35.9 45.6 55.1 63.8 67.7 67.6 59.1 48.5 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 54.5			43.6													
1940 20.8 34.4 41.2 51.2 58.7 67.8 69.6 68.6 59.1 53.3 44.3 42.4 51.0 1941 37.0 *33.6 *40.6 *57.1 *63.8 *71.1 *74.7 *74.7 *69.4 *62.7 45.8 41.7 *56.0 1942 35.5 33.0 44.6 56.0 *63.0 73.6 74.2 73.9 *66.3 55.0 47.1 34.8 54.7 1943 39.6 40.4 42.6 50.9 64.4 71.2 70.0 *74.7 *63.7 *53.5 *43.2 39.4 *54.5 1944 38.4 44.1 47.4 54.0 64.9 69.9 68.6 70.0 65.0 54.6 45.1 37.5 55.0 1945 38.8 43.6 55.0 *57.8 59.0 67.6 71.1 70.0 67.2 54.2 47.0 32.2 *55.3 Summary of Period 1921-45 Max. 50.0 48.5 56.2 58.5 65.8 73.6 74.7 74.7 70.4 62.7 51.9 47.9 57.5 Min. 20.8 33.0 40.4 49.6 57.6 66.2 68.6 67.6 59.1 49.8 39.4 28.4 51.0 Mean 38.4 40.3 46.2 54.2 61.6 69.1 71.7 70.8 63.5 54.9 45.3 39.2 54.8 Summary of Record Max. 50.0 48.5 56.2 58.5 67.4 73.6 74.7 74.7 70.7 65.1 54.2 47.9 57.5 Min. 20.8 27.1 35.9 45.6 55.1 63.8 67.7 67.6 59.1 48.5 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 54.5	1939								68.2							
1941 37.0 *33.6 *40.6 *57.1 *63.8 *71.1 *74.7 *74.7 *69.4 *62.7 45.8 41.7 *56.0 1942 35.5 33.0 44.6 56.0 *63.0 73.6 74.2 73.9 *66.3 55.0 47.1 34.8 54.7 1943 39.6 40.4 42.6 50.9 64.4 71.2 70.0 *74.7 *63.7 *53.5 *43.2 39.4 *54.5 1944 38.4 44.1 47.4 54.0 64.9 69.9 68.6 70.0 65.0 54.6 45.1 37.5 55.0 1945 38.8 43.6 55.0 *57.8 59.0 67.6 71.1 70.0 67.2 54.2 47.0 32.2 *55.3 Summary of Period 1921-45 Max. 50.0 48.5 56.2 58.5 65.8 73.6 74.7 74.7 70.4 62.7 51.9 47.9 57.5 Min. 20.8 33.0 40.4 49.6 57.6 66.2 68.6 67.6 59.1 49.8 39.4 28.4 51.0 Mean 38.4 40.3 46.2 54.2 61.6 69.1 71.7 70.8 63.5 54.9 45.3 39.2 54.8 Summary of Record Max. 50.0 48.5 56.2 58.5 67.4 73.6 74.7 74.7 70.7 65.1 54.2 47.9 57.5 Min. 20.8 27.1 35.9 45.6 55.1 63.8 67.7 67.6 59.1 48.5 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 54.5							67.8									
1942 35.5 33.0 44.6 56.0 *63.0 73.6 74.2 73.9 *66.3 55.0 47.1 34.8 54.7 1943 39.6 40.4 42.6 50.9 64.4 71.2 70.0 *74.7 *63.7 *53.5 *43.2 39.4 *54.5 1944 38.4 44.1 47.4 54.0 64.9 69.9 68.6 70.0 65.0 54.6 45.1 37.5 55.0 1945 38.8 43.6 55.0 *57.8 59.0 67.6 71.1 70.0 67.2 54.2 47.0 32.2 *55.3 Summary of Period 1921-45 Max. 50.0 48.5 56.2 58.5 65.8 73.6 74.7 74.7 70.4 62.7 51.9 47.9 57.5 Min. 20.8 33.0 40.4 49.6 57.6 66.2 68.6 67.6 59.1 49.8 39.4 28.4 51.0 Mean 38.4 40.3 46.2 54.2 61.6 69.1 71.7 70.8 63.5 54.9 45.3 39.2 54.8 Summary of Record Max. 50.0 48.5 56.2 58.5 67.4 73.6 74.7 74.7 70.7 65.1 54.2 47.9 57.5 Min. 20.8 27.1 35.9 45.6 55.1 63.8 67.7 67.6 59.1 48.5 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 54.5							*77 7	*71 7								
1943 39.6 40.4 42.6 50.9 64.4 71.2 70.0 *74.7 *63.7 *53.5 *43.2 39.4 *54.5 1944 38.4 44.1 47.4 54.0 64.9 69.9 68.6 70.0 65.0 54.6 45.1 37.5 55.0 1945 38.8 43.6 55.0 *57.8 59.0 67.6 71.1 70.0 67.2 54.2 47.0 32.2 *55.3 Summary of Period 1921-45 Max. 50.0 48.5 56.2 58.5 65.8 73.6 74.7 74.7 70.4 62.7 51.9 47.9 57.5 Min. 20.8 33.0 40.4 49.6 57.6 66.2 68.6 67.6 59.1 49.8 39.4 28.4 51.0 Mean 38.4 40.3 46.2 54.2 61.6 69.1 71.7 70.8 63.5 54.9 45.3 39.2 54.8 Summary of Record Max. 50.0 48.5 56.2 58.5 67.4 73.6 74.7 74.7 70.7 65.1 54.2 47.9 57.5 Min. 20.8 27.1 35.9 45.6 55.1 63.8 67.7 67.6 59.1 48.5 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 54.5						*63 O	72 6	71. 0								
1944 38.4 44.1 47.4 54.0 64.9 69.9 68.6 70.0 65.0 54.6 45.1 37.5 55.0 1945 38.8 43.6 55.0 *57.8 59.0 67.6 71.1 70.0 67.2 54.2 47.0 32.2 *55.3 Summary of Period 1921-45 Max. 50.0 48.5 56.2 58.5 65.8 73.6 74.7 74.7 70.4 62.7 51.9 47.9 57.5 Min. 20.8 33.0 40.4 49.6 57.6 66.2 68.6 67.6 59.1 49.8 39.4 28.4 51.0 Mean 38.4 40.3 46.2 54.2 61.6 69.1 71.7 70.8 63.5 54.9 45.3 39.2 54.8 Summary of Record Max. 50.0 48.5 56.2 58.5 67.4 73.6 74.7 74.7 70.7 65.1 54.2 47.9 57.5 Min. 20.8 27.1 35.9 45.6 55.1 63.8 67.7 67.6 59.1 48.5 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 54.5										1,00 .3	25.0					
1945 38.8 43.6 55.0 *57.8 59.0 67.6 71.1 70.0 67.2 54.2 47.0 32.2 *55.3 Summary of Period 1921-45 Max. 50.0 48.5 56.2 58.5 65.8 73.6 74.7 74.7 70.4 62.7 51.9 47.9 57.5 Min. 20.8 33.0 40.4 49.6 57.6 66.2 68.6 67.6 59.1 49.8 39.4 28.4 51.0 Mean 38.4 40.3 46.2 54.2 61.6 69.1 71.7 70.8 63.5 54.9 45.3 39.2 54.8 Summary of Record Max. 50.0 48.5 56.2 58.5 67.4 73.6 74.7 74.7 70.7 65.1 54.2 47.9 57.5 Min. 20.8 27.1 35.9 45.6 55.1 63.8 67.7 67.6 59.1 48.5 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 54.5									74(4.			*43.2				
Summary of Period 1921-45 Max. 50.0 48.5 56.2 58.5 65.8 73.6 74.7 74.7 70.4 62.7 51.9 47.9 57.5 Min. 20.8 33.0 40.4 49.6 57.6 66.2 68.6 67.6 59.1 49.8 39.4 28.4 51.0 Mean 38.4 40.3 46.2 54.2 61.6 69.1 71.7 70.8 63.5 54.9 45.3 39.2 54.8 Summary of Record Max. 50.0 48.5 56.2 58.5 67.4 73.6 74.7 74.7 70.7 65.1 54.2 47.9 57.5 Min. 20.8 27.1 35.9 45.6 55.1 63.8 67.7 67.6 59.1 48.5 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 54.5																
Max. 50.0 48.5 56.2 58.5 65.8 73.6 74.7 74.7 70.4 62.7 51.9 47.9 57.5 Min. 20.8 33.0 40.4 49.6 57.6 66.2 68.6 67.6 59.1 49.8 39.4 28.4 51.0 Mean 38.4 40.3 46.2 54.2 61.6 69.1 71.7 70.8 63.5 54.9 45.3 39.2 54.8 Summary of Record Max. 50.0 48.5 56.2 58.5 67.4 73.6 74.7 74.7 70.7 65.1 54.2 47.9 57.5 Min. 20.8 27.1 35.9 45.6 55.1 63.8 67.7 67.6 59.1 48.5 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 54.5		30.8	43.6	1 2003	*57.8	59.0	67.6	71.1	70.0	67.2	54.2	47.0	1 32.2	*55.3		
Min. 20.8 33.0 40.4 49.6 57.6 66.2 68.6 67.6 59.1 49.8 39.4 28.4 51.0 Mean 38.4 40.3 46.2 54.2 61.6 69.1 71.7 70.8 63.5 54.9 45.3 39.2 54.8 Summary of Record Max. 50.0 48.5 56.2 58.5 67.4 73.6 74.7 74.7 70.7 65.1 54.2 47.9 57.5 Min. 20.8 27.1 35.9 45.6 55.1 63.8 67.7 67.6 59.1 48.5 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 54.5		ry of				(·						
Mean 38.4 40.3 46.2 54.2 61.6 69.1 71.7 70.8 63.5 54.9 45.3 39.2 54.8 Summary of Record Max. 50.0 48.5 56.2 58.5 67.4 73.6 74.7 74.7 70.7 65.1 54.2 47.9 57.5 Min. 20.8 27.1 35.9 45.6 55.1 63.8 67.7 67.6 59.1 48.5 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 54.5				56.2	58.5	65.8	73.6		74.7	70.4			47.9	57.5		
Mean 38.4 40.3 46.2 54.2 61.6 69.1 71.7 70.8 63.5 54.9 45.3 39.2 54.8 Summary of Record Max. 50.0 48.5 56.2 58.5 67.4 73.6 74.7 74.7 70.7 65.1 54.2 47.9 57.5 Min. 20.8 27.1 35.9 45.6 55.1 63.8 67.7 67.6 59.1 48.5 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 54.5		20.8	33.0	40.4	49.6	57.6	66.2		67.6	59.1				51.0		
Max. 50.0 48.5 56.2 58.5 67.4 73.6 74.7 74.7 70.7 65.1 54.2 47.9 57.5 Min. 20.8 27.1 35.9 45.6 55.1 63.8 67.7 67.6 59.1 48.5 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 54.5		30.4	40.3	46.2	54.2	61.6	69.1	71.7	70.8	63.5	54.9	45.3	1 39.2	1.54.8		
Min. 20.8 27.1 35.9 45.6 55.1 63.8 67.7 67.6 59.1 48.5 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 54.5	Summa	ary of		1												
Min. 20.8 27.1 35.9 45.6 55.1 63.8 67.7 67.6 59.1 48.5 38.9 28.4 51.0 Mean 38.3 38.7 46.6 53.7 61.7 68.4 71.2 70.5 65.6 54.8 45.3 38.7 54.5				56.2	58.5	67.4	73.6				65.1	54.2				
			27.1								48.5	38.9		51.0		
*Interpolated 157					53.7	61.7			70.5	65.6	54.8	45.3	38.7	54.5		
	3	*Interp	olated	1			15	7								

				Highe		peratu	re - W	aynesv	ille,				
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Highest
1894		(con cres des			84	90	87	90	86	71	69	61	
1895	62	66	80	78	89	91	90	89	88	74	73	67	91
1896	61	68	75	86	88	87	87	90	88	78	71	63	90
1897	57	69	75	81	83	90	89	86	90	81	71	64	90
1898	69	66	80	78	88	91	89	88	84	78	67	63	91
1899	60	65	72	81	87	88	92	89	87	78	68	62	92
1900	61	66	70	81	83	86	90	92	88	81	76	59	92
1901	62	65	73	76	83	88	90	85	82	78	67	64	90
1902	65	62	68	81	86	88	90	93	89	83	80	65	93
1903	68	69	72	83	90	86	87	90	84	83	74	56	90
1904	61	69	74	75	89	83	85	88	87	76	73	59	89
1905			76	79	86	86	87	87	84	80	70	59 65	87
1906	67	67	71	82	84	92	85	85	83	76	75	65	92
1907	76	65	89	78	80	81	86	82	82	79	72	66	89
1908	61	64	81	86	85	88	90	91	86	81	74	74	91
1909	75	71	71	89	84	88	87	87	85	77	74	70	89
1910	65	62	82	80j	84	84	87	87	86	84	67	58	87
1911	70	73	81	78	90	92	90	89	88	86	72	66	92
1912	66	61	79	78	86	88	88	89	88	84	74	67	89
1913	69	66	72	81	85	91	97	90	89	85	75	72	97
1914	78	66	81	83	91	94	94	91	89	84	71	65	94
1915	61	60	61	83	86	84	88	88		~			
1916			1300 (page 6444)	C3 50 000	Chemicals (sem	900 Om 600	82	83	79	76	71	65	
1917	68	68	70	78	80	86	84	84		74			
1918		new sweet cases		anous es		-	90	90	86	83	76	70	
1919	70	~~~	000 cm cm			86	89	90	89	85	77		
1920	69	65	75	83	83	87	87	-	-	81	76	58	
1921	64	70	81	84	85		90	anu anu anu	89	82	75		
1922	GEO 600 COV	GEO CINH COM	OP 74 000	82	83	85	87		~				
1923		GB1 GB4-C-	-	a====		88	91	87	84	78	64	69	
1924	61	63	72	77	85	93	89	90	85	76	70	71	93
1925	58	68	77	89	83	84	88	92	91	75	68	63	92
1926		63	71	76	85	85	93	85	86	80	70		93
1927		One Grap (SEA)		con descon	86	95	94	88	91	83	71	70	95
1928	68	61		72	89	86	90						
1929			eno casegna	84	87	88	90	90	87	72	73	67	
1930	69	75	65	83	86	93	95	96	89	77	77	58	96
1931	62	64	68	76	85	91	92	90	89	84	75	73	92
1932	73	76	74	79	84	87	93	91	89	78	70	66	93
1933	67	71	78	79	85	93	92	86	90	90	71	68	93
1934	73	69	72	80	90	96	94	88	84	78	69	67	96
1935	65	64	90	82	84	88	92	93	86	80	74	54	93
1936	65	70	75	82	89	95	98	93	89	76	72	60	98
1937	69	67	72	86	87	90	89	86	85	79	68	60	90
1938	62	68	76	81	85	84	89	88	85	82	74	59	89
1939	64	70	73	80	83	89	89	85	88	81	66	62	89
1940	49	63	71	78	85	86	90	85	85	610 (00) (04)		62	90
1941	62	63	900 GEO GEO								72	67	
1942	64	59	72	84	000 EM CT	96	97	92		76	72	56	
1943	71	68	69	78	85	91	87		00			71	
1944	68	75	80	83	87	92	90	90	88	83	78	64	92
1945	62	68	80		84		89	87	85	88	74	59	
		Period	1 1921-		00	0/	00	0/		00	1 70		00
Max.	73	76	90 65	89	90	96 84	98 87	96	91	90 72	78	[]	98 89
Min. Mean	49 64.8	59 67.4	74.5	72 80.7	83 85 .5	89.8	91.2	96 85 89.1	84 87.3	79.9	64 71.6	73 54 64.1	92.8
		Record		1 000	ره رن	0,00	/104	U/ 01	رهای	1/0/	11100	1 04.1	/ - • -
Max.	78	76	90	89	91	96	98	96	91	90	80	74	98
Min.	49	59	61	72	8 0	81	98 82	96 82	79	71	64	54	87
Mean	65.5	66.7	74.9	80.8	85.6	88.7	89.7	88.6	86.6	79.9	72.1	64.1	91.6

Lowest Temperature - Waynesville, N. C.

	Lowest Temperature - Waynesville, N. C.												
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Lowest
1894					33	34	46	49	41	25	14	-4	
1895	-4	-10	16	26	30	42	53	45	34	23	20		-10
1896	5	- 6	15	28	43	44	47	52	33	24	21	<u>5</u> 8	-6
1897	-12	13	19	26	34	42	47	49	30	28	15	17	- 12
1898	4	2	20	22	36	48	ši	54	43	22	14	2	2
1899	11	11	2	24	43	43	45	51	29	25	20	4	2
1900	0	0	17	20	31	50	48	52	39	35	16	14	0
1901	11	7	8	26	35	46	51	47	33	26	15	- 3	- 3
		6	13	22		46	51	50	26	28	25	12	- 5
1902	9				36		1.6	50	36		20	8	6 6
1903		6	28	27	35	41	46	52	38	16	9		
1904	4	8	20	15	38	40	47	53	41	19	12	18	4
1905			27	25	39	74	50	47	46	24	20	10	
1906	11	_5	12	24	30	49	51	58	47	23	11	_4	4
1907	14	15	26	17	34	41	51	46	ft0	23	17	11	11
1908	10	1	21	29	31	44	55	52	32	26	15	15	1
1909	3	2	19	23	30	51	48	45	31	19	20	-4	-4
1910	10	- 3	17	30	29	42	49	51	39	14	15	1	- 3
1911	9	9	13	24	33	43	43	48	52	29	13	15	9
1912	- 3	-7	16	26	35	38	50	46	38	28	7	10	- 7
1913	17	9	14	31	32	40	46	47	31	25	17	9	9
1914	12	9	7	25	34	51	45	52	37	18	4	-1	-1
1915	7	11	15	17	38	43	49	<u>49</u> 58					
1916							64	58	44	32	16	6	
1917	8	-4	18	32	34	42	56	54		22			
1918							43	45	30	29	21	17	
1919	1					47	47	46	38	44	15	9	
1920	-2	1	3	22	34	148	52			18	15	14	- 2
1921	18	16	4	20	31		54	48	52	24	20		
1922				26	32	45	50						
1923						44	48	47	42	27	16	14	
1924	-4	11	16	20	32	43	49	49	38	20	14	8	-4
1925	14	13	9	22	32	49	49	42	49	25	12	- 2	-2
1926		14	10	23	32	40	53	53	46	27	14		
1927					38	50	52	43	33	30	22	6	
1928	- 7	14		23	35	40	52						
1929				31	36	42	45	45	44	34	4	- 2	
1930	8	12	12	25	35	36	48	42	39	21	9	8	8
1931	5	13	15	31	32	39	56	44	33	25	18	20	5
1932	19	16	6	29	35	47	44	48	38	27	13	17	6
1933	18	-4	17	29	42	38	43	52	37	25	13	15	-4
1934	- 2	5	13	28	36		56	48	43	23	18	0	- 2
1935	8	9	17	25	34	43		40	36	20	12	0	0
1936	- 5	2	18	20	36	36	52	45	40	25	9	13	- 5
1937	21	12	12	21	35	43	42	52	39	23	8	0	0
1938	4	18	14	26	40	45	49	51	35	24	7	11	4
1939	13	8	12	24	29	52	48	47	43	22	17	13	8
1940	- 12	9	15	21	27	45	47	50	29			12	-12
1941	11	15					41				17	10	
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194	6	5	17	20	34	49	46	50	42	26	20	2	2
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		Period		15	رر		ارر	42	42	۷!	14	-5	
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Mean	6.8	9.6	13.3	24.1	34.7	44.5	43	1,8 7	29	20	14	- 5	-12
				24°T	2401	44.5	49.6	48.1	40.0	24.9	13.9	7.2	0.1
Min.	- 12	-10	2	15	45 27	31,	64 43	60 42	52 29	44 14	25 4	20	11
Mean	6.3	6.7	14.7	24.3	34.6	34 44.2	49.4	49.1	29 38.7	24.8	14.7	-5 7.6	-12 0.2
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Ground Water in the French Broad River Basin, North Carolina

By H. E. LeGrand

INTRODUCTION

A cooperative investigation of the ground-water resources of North Carolina by the North Carolina Department of Conservation and Development and the Geological Survey, United States Department of the Interior, has been in progress since 1941. The program is under the direction of A. N. Sayre, Geologist in Charge, Ground Water Branch, U. S. Geological Survey, and J. L. Stuckey, State Geologist of North Carolina.

Detailed investigations of the ground-water resources of specific areas are being made as a part of the larger State-wide project. Such studies included the collection of all important hydrologic data and a reconnaissance of the geology. Detailed field work has been completed in 18 counties and a large amount of information has been obtained in other areas. During the war several investigations were made for military establishments and in defense areas. Publications of the Department of Conservation and Development containing information on ground water include: Information Circular 3, Selected well logs in the Coastal Plain of North Carolina; Information Circular 6, A possible new source of ground-water supply in the Elizabeth City area, North Carolina; Bulletin 47, Progress report on ground water in North Carolina; Bulletin 51, Ground water in the Halifax area, North Carolina; Bulletin 55, Geology and ground water in the Greensboro area, North Carolina; and the following unnumbered reports: Hydrologic data on the Neuse River Basin, 1866-1945; Hydrologic data on the Cape Fear River Basin, 1820-1945; Hydrologic data on the Yadkin-Pee Dee River Basin, 1866-1945; and Hydrologic data on the Catawba and Broad River Basin, 1872-1945.

No systematic survey of the ground-water resources has been made in the French Broad River Basin. This preliminary report represents the results of a reconnaissance made in October 1949. A more detailed report is planned as Statewide investigations continue.

The French Broad River Basin in North Carolina lies within the Mountain division of the Appalachian physiographic province. The entire area is composed of chains of mountains and ridges and of deep, narrow intervening valleys. The major valleys have flat floors composed of debris deposited by flood runoff from upland slopes. The altitude ranges from 6,711 feet at Mt. Mitchell to less than 1,200 feet where the river leaves the State.

French Broad River flows northwestward in consequence of the surface slope. It is joined by many tributaries of steep gradient having little relation to geologic structure. The headward parts of these streams are fed by numerous springs of small flow.

GENERAL OCCURRENCE OF GROUND WATER

The source of ground water is precipitation. Some of the water falling on the surface of the earth enters and moves through the soil. In the igneous and metamorphic rocks of the French Broad River Basin the water, after penetrating the soil, moves largely through joints and other fractures and along cleavage planes.

Ground water moves under the influence of gravity, and the point of discharge is always at a lower level than the point of recharge or replenishment. In North Carolina, recharge occurs in interstream areas and the natural discharge is into streams, lakes, swamps, and the sea.

A part of the rain falling on the surface percolates downward through the earth until it reaches the zone of saturation, below which the pores and openings of the rock are filled with water. The surface of the zone of saturation is called the water table, and in the area studied it generally is a few feet to about 60 feet below the land surface. Discharge of ground water is a continuous process, though the rate varies from time to time. Thus the ground-water levels would decline continuously if it were not for precipitation raising the water table from time to time. For this reason the water table is not a fixed surface but is continuously fluctuating.

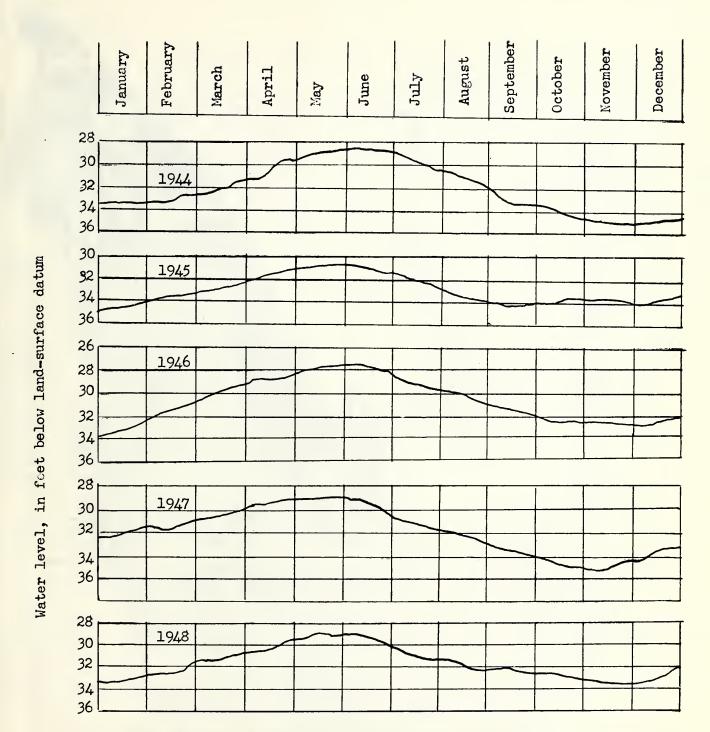
The water table fluctuates with precipitation because the source of the ground water is precipitation. The correlation of ground-water levels with rainfall is complicated by several factors. The proportion of rainfall that becomes direct stream runoff, or transpires, evaporates, or reaches the water table is determined by the intensity and duration of the rainfall, the character and condition of the surface material on which the rain falls, and the temperature of the air, which affects the rate of evaporation and the rate of transpiration of the water by vegetation. In North Carolina the water table generally declines during the summer and autumn even though the rainfall is heavy, because of the large amount of water lost by evaporation and transpiration. Although rainfall is less in the winter and spring, the water level generally rises because losses by evaporation and transpiration are greatly reduced.

The water level in well 1, Transylvania County, has been recorded daily since 1932. Graphs showing the general fluctuations of the water level in this well from 1944 through 1948 are shown on the opposite page. The general rise in water level to a maximum in May and June and the decline to a minimum in November and December are clearly evident.

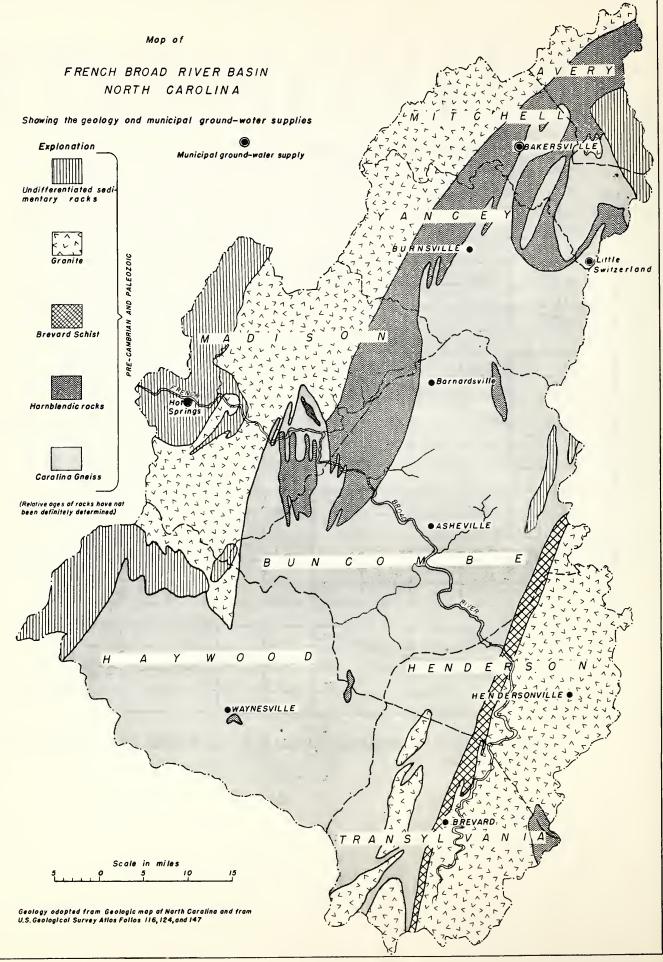
The daily water level below land surface of well 1, during 1948 is shown in the table on page 162.

Daily Water Level Below Land Surface of Well 1

Date	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	33.38	32.59	31.88	30.60	29.43	29.29	30.25	31.40	32.06	32.60	33.29	33.41
2	33.25	32.56	31.82	30.59	29.39	29.35	30.30	31 .43	32.09	32.61	33.31	33.43
3 4	33.32	32.55	31.80	30.58	29.37	29.35	30.33	31.42	32.10	32.63	33.32	33.40
4	33.29	32.51	31.79	30.57	29.35	29.38	30.35	31.45	32.11	32.65	33.35	33.40
5	33.28	32.49	31.78	30.52	29.31	29.42	30.41					33.38
6		32.48		30.45		29.42			32.14			33.35
7	33.22			30.41		29.45	30.44	31.56	32.15	32.69	33.40	33.32
8	-	32.44				29.49	30.50	31.59	32.16	32.72	33.43	33.29
9		32.42					30.57					
10		32.40					30.60					
11		32.38					30.63					
12		32.26										
13	33.05						30.69					
14	33.03			30.14			30.73					
15		32.13					30.75					
16	32.97	32.13		-			30.80					
17	32.95	32.12					30.85					
18		32.12		29.98			30.90					
19	32.91	32.11					30.95					
20		32.09					30.99					
21	32.83	32.08					31.00					
22	-	32.05				29.95					33.59	
23	32.78		_	29.77		29.99					33.58	
24	32.75	32.03		29.72			31.12					
25		32,02					31.15					
26	32.71	31.96		29.61			31.20					
27		31.94		29.58			31.22					
28		31.91					31.25					
29	32.64	31.89					31.30					
30	32.62		30.66				31.33				33 .40	
31	32.61		30.65	-	29.26		31.35	32.03		33 .27		32.17



Graph showing fluctuations of water level in well No. 1, Transylvania County.



FACTORS AFFECTING YIELD OF WELLS

In the crystalline and consolidated sedimentary rocks of the Mountain division, ground water moves along joints and other fractures, cleavage and bedding planes, and planes of schistosity. Drilled wells obtain water from these openings and the wells that encounter the most and the largest openings usually yield the largest supplies of water. The productiveness of the rocks varies widely not only from one type of rock to another, but also from place to place within each type of rock. Data indicate that the schistose rocks are the best aquifers. Gneiss appears to rank second in productiveness, and granite is somewhat less productive.

One of the most important problems in the Mountain Province is to select the best possible site for drilling a well to obtain the maximum quantity of water. Factors to be considered in selecting a well site include texture of the rock, amount and kind of jointing, fracturing, shearing, bedding, cleavage and schistosity, veins, thickness of weathered mantle, and topography.

The coarser-grained rocks generally are more productive than the finer-grained ones, 1/probably because fracturing or shearing produces larger openings in the coarse-grained rocks than it does in fine-grained rocks. Wells drilled where joints, fractures, and shearing planes are closely spaced usually are more productive than wells drilled where these openings are more widely spaced. In sedimentary rocks, large openings may occur along bedding planes; and in metamorphic rocks, whether of sedimentary or igneous origin, planes of cleavage and schistosity are important in the occurrence and movement of ground water. Rocks in which these planes are abundant and closely spaced generally are more productive than rocks in which they are widely spaced.

Quartz veins contain many openings for the storage and movement of ground water. 2/ Quartz is a hard, brittle mineral that fractures easily and breaks into relatively large, irregular fragments when subjected to earth stresses. Ground water usually can move more readily through quartz veins than through adjacent rock. Wells intersecting one or more quartz veins generally are much more productive than wells that do not.

The thickness of weathered rock or soil mantle, which covers most of the rocks, is important to the yield of water. A thick layer of weathered rock stores large quantities of water which moves into the fractures of the underlying rock. Both erosion and mass movement of the soil tend to create a rather thick layer of soil mantle along the lower fringes of steep slopes. The upper slopes are virtually bare of soil or have only a thin blanket sufficient for the growth of plants.

The topographic features in the basin vary considerably in the extent to which they influence the occurrence of water. The upland areas are steep, thereby allowing a great amount of runoff from precipitation and consequently little influent seepage. Of the water that seeps into the rocks on the uplands much leaks out on the steep slopes, producing a hydraulic gradient away from the top of the uplands.

1/ Mundorff, M. J., Hydrologic data on the Yadkin-Pee Dee River Basin, 1866-1945; North Carolina Dept. Cons. and Devel. Bull. p. 147, 1948.

2/ Mundorff, M. J., op. cit., p. 147.

Thus the water table lies deep in much of the upland area. Wells located on hills and mountains penetrate the water table at a greater depth than those in valleys. Upon pumping the wells on the hills, the water table is lowered, creating a cone of depression with the center of the cone at the well. As pumping continues the cone may grow larger and deeper but its span is limited because of the topography and because of the relatively low permeability of rocks at progressively greater depths below the surface. The yield of wells in these areas is not great.

Wells drilled in lowlands, even though penetrating the same rocks as those on uplands, intersect the water table near the ground surface. Thus the water table can be lowered a greater distance by pumping than in a well of the same depth on a hill. In addition, much natural ground-water discharge that normally occurs in the valleys can be saved when pumping lowers the level slightly. In contrast to hills, valleys yield moderately large supplies of water to wells. Many wells in valleys are capable of yielding more than 50 gallons a minute.

ROCKS AND THEIR WATER-BEARING CHARACTER

The quantity and quality of water that can be obtained from wells and springs is closely related to the geology of an area. Therefore, an understanding of the principles of geology is of great value in estimating the ground-water possibilities of an area.

Inasmuch as this study was only a reconnaissance, the geology on the accompanying map is generalized. The geology is taken in part from the geologic map of North Carolina 3/ and in part from three published geologic folios 4/ that pertain to the area.

Three great classes of rocks -- metamorphic, igneous, and sedimentary -- crop out in the basin of French Broad River. The metamorphic rocks generally consist of a variety of schists into which igneous rocks of late Paleozoic age were intruded. The intrusions are granite, gabbro, and associated igneous rocks. Shale, slate, quartzite, and limestone occur in a relatively restricted area near the Tennessee State line.

The rocks generally strike northeastward and dip steeply. The older rocks have been foliated and subsequent deformation has altered earlier structures of the rocks. The folding and faulting of the older rocks and the extensive intrusion of igneous rocks have caused a repetition of beds that is not easily measured.

^{3/} Geologic map of North Carolina: North Carolina Dept. Cons. and Devel., 1937.

^{4/} Keith, Arthur, U. S. Geol. Survey Geol. Atlas, Asheville folio (no. 116), 1904; Ū. S. Geol. Survey Geol. Atlas, Mt. Mitchell folio (no. 124), 1905; U. S. Geol. Survey Geol. Atlas, Pisgah folio (no. 147), 1907.

Carolina Gneiss

The Carolina gneiss of pre-Cambrian age, so named by Keith 5/ because of its extensive development in North Carolina and South Carolina, crops out in a wide area in the French Broad River Basin. It is considered to be the oldest formation in the area, because it is cut by igneous rocks and is overlain by sedimentary rocks. It contains some areas of igneous rocks too small to be mapped separately.

According to Keith, 6/ "the formation consists of an immense series of interbedded mica schists, garnet schists, mica gneisses, garnet gneisses, and fine granitoid layers. Most of then are light gray or dark gray, weathering to a dull gray and greenish gray." The rocks are composed largely of quartz, feldspar and muscovite mica, although biotite, kyanite, sillimanite, and garnet are abundant locally.

The Carolina gneiss contains numerous fractures along which ground water moves. Openings along the planes of schistosity that dip at high angles are the most prevalent and therefore the most important in the occurrence of water. However, joints crossing the schistosity are numerous enough to permit the lateral movement of water in the area surrounding a well. The extensive jointing of the Carolina gneiss can be seen along the French Broad River for several miles north of Asheville, Buncombe County, where considerable water seeps from the fractured rock above the river.

Only a rough estimate of yields from wells deriving water from the Carolina gneiss can be made, owing to the fact that the yields of wells and the type of rocks penetrated are not everywhere known. Also, other factors such as topography, structure, and degree of weathering affect the yield of some wells and tend to mask the effects of lithology. The average yield of 31 wells in the Carolina gneiss is 62 gallons per minute. This is a very high average yield for wells in crystalline rocks, and it indicates that the Carolina gneiss is a good water-bearing formation.

Hornblendic Rocks

Rocks rich in ferromagnesium minerals and varying considerably in degree of metamorphism constitute the hornblendic rocks. They include chiefly the Roan gneiss, 7/ which consists of a thick sequence of beds of hornblende gneiss, hornblende schist, and diorite, and some interbedded mica schist and mica gneiss. The hornblendic rocks have considerable areal extent.

The rock is black or dark green because of the presence of large quantities of hornblende. Most of the rock has been metamorphosed to such a degree that it displays a prevailing northeasterly foliation along which granite has been intruded in

5/Keith, Arthur, U. S. Geol. Survey Geol. Atlas, Asheville folio (no. 116), p. 2, 1904.

6/Idem, p. 2.

7/op. cit., p. 3.

many places. Crosscutting of the hornblendic rocks by granite is more common than in the Carolina gneiss. In addition to the hornblendic rocks shown on the geologic map many masses of these rocks too small to map occur as narrow sheets in the Carolina gneiss suggesting that the Carolina gneiss is older.

The hornblendic rocks are well jointed, the joints that cross the foliation being at least as abundant as the joints in other rocks of the basin. In many places the beds of hornblendic rocks are so thin that wells penetrate them completely and pass into other types of rocks. Although few records of yield of wells in the hornblendic rocks are available, the conspicuous fractures observed during the field study suggest that the average yield of wells in these rocks may exceed 45 gallons per minute.

Granite

Although the granite crops out only in part of the area (see the accompanying geologic map) it underlies a large part of the area. The granitic rocks vary considerably in texture, in appearance, and in field relations with other rocks. It is generally thought that much of the granite was intruded during or immediately after the formation of the Appalachian Mountains near the close of the Paleozoic era, but some of the granite may be older. Keith 8/ describes four types of granite in the French Broad River Basin but they are not differentiated in this report.

The granite was intruded as large, rather homogeneous masses and as smaller bodies. The smaller bodies include sheetlike intrusions along the foliation of gneiss and schist and small veins penetrating older igneous rocks. All the other rocks except the quartzite and slate were intruded to some extent by the granite. At many places it is difficult to discern whether the granite or the rock that it intruded is more predominant.

Ground water occurs in the granite chiefly in joints and fractures and along zones of shear. Horizontal joints are common and transmit water freely. At places where the granite has been considerably sheared and fractured, wells will yield moderate supplies of ground water, but in areas where it is massive little or no water can be obtained. The average yield of 15 wells drilled in granite in the French Broad River Basin is 22.5 gallons a minute. The average yield of wells can be increased considerably by a careful selection of drilling sites, the choice being based on geologic and topographic conditions. The number and size of joints and fractures in granite decrease rapidly with increasing depth, and most wells obtain a large proportion of their water at relatively shallow depth. Drilling beyond 250 or 300 feet is rarely advisable; wells with small yields at 150 to 200 feet have little chance of getting more water at greater depth.

Undifferentiated Sedimentary Rocks

Sedimentary rocks are found chiefly along the northwestern part of the basin near the Tennessee State line. These rocks are partly folded and faulted conglomerate, sandstone, shale, and limestone of Cambrian age and younger, and have been mapped as an undifferentiated unit in the present study. Parts of the area in which they crop out are shown in U.S. Geological Survey Folios 116 and 124. The Brevard schist of Cambrain age has been mapped separately.

8/ U. S. Geol. Survey Geol. Atlas (folios 116, 124, 147).

These sedimentary rocks are jointed to about the same extent as are the igneous and metamorphic rocks. Ground water moves along the open spaces between the bedding planes. Although each type of sedimentary rock differs in its water-yielding capacity, time was not available for ground-water studies of each type.

OCCURRENCE OF GROUND WATER IN THE FRENCH BROAD RIVER BASIN

The effect of the mountainous topography of the basin on the occurrence of ground water is considerable. Topography affects precipitation, the higher mountains receiving the greatest rainfall. The runoff from mountainous slopes, however, is large, but it is believed that considerable water seeps into the soil and the underlying fractures in the bedrock to become ground water.

Flood Plains and Lowlands

The general movement of both surface and subsurface water is controlled by gravity and is therefore toward the valleys. Most valleys, especially those lying between prominent ridges, are filled to some extent with rock waste transported from higher slopes during floods. These flood-plain deposits are recharged directly from precipitation and surface runoff from upland slopes, by way of channeled streams and from diffuse seepage out of upland slopes. There is considerable gain of water to the flood-plain deposits also along their boundaries with the upland slopes, where the hydraulic gradient in the residuum and colluvium on the lower slopes of the ridges is steep enough to permit the movement of water into the floodplain deposits. Not all water that reaches the flood-plain deposits becomes a permanent part of the ground-water reservoir. Instead, it represents the approximate amount that discharges from the deposits, which is virtually rejected by the deposits because they are essentially filled. This rejected recharge, despite its apparent loss to the ground-water body under natural conditions, is saved and becomes usable ground water when wells are pumped in the vicinity of discharge points in the flood plains.

The flood-plain deposits, consisting of sand, clay, and gravel, are thought to contain a large, but heretofore undeveloped, water supply. In virtually all wells the deposits are cased off and water is drawn from the bedrock below. The thickness of the flood-plain deposits varies from valley to valley and within each valley. It generally is greatest in the middle of a valley where it is commonly 50 to 75 feet. Two wells in Henderson County reportedly penetrated more than 220 feet of valley fill.

In addition to the large amount of water in storage in the flood-plain deposits under natural conditions, there is a good possibility of developing large ground-water supplies from water infiltrated laterally through the deposits from a nearby stream. The deposits appear to contain coarse-grained material of high permeability, and the streams are plentiful and are relatively pure.

Upland Areas

Above the graded valley floors the topography is so steep that the water table reaches the surface in numerous places. The steep surface slopes tend to cut into the water table although the soil mantle effectively confines the water, except locally where springs occur. Some moisture emerges from fine fractures in the rock and from interstices in the soil and is lost by evaporation. Thus the hydraulic gradient is steep and recharge to the valley fill is considerable.

Springs occur at all levels above the valley floor except within several tens of feet of a hilltop. They are exceedingly common in the French Broad River Basin because the slope of the ground in many places is steeper than the slope of the water table and transects it. The outstanding feature of these springs is the fact that practically all of them yield less than 10 gallons per minute each and the majority yield only 1 to 3 gallons per minute. The yield of most of the springs fluctuates little, although the yield of some springs emerging from the upper slopes of the hills diminishes during dry seasons.

In addition to the present springs, others may be developed at numerous places on hills where the surface slope transects the water table. Where interconnecting joints in the rocks occur at the junction of the water table and the surface slope, there is discharge of ground water either as a spring or as diffuse seepage. If the soil zone is extremely thin or absent at this junction the flow of water from the fractures is concentrated, and a spring results. However, a moderately thin layer of soil at this junction permits water emerging from the fractures to spread through it, and the water is quickly lost by evaporation. Most springs emerge in the coves at the heads of valleys where the ground is steep and ground water will have less chance of being dispersed. Springs would probably be larger and more common in such places if the soil did not migrate toward these coves and tend to cover the apertures through which the springs emerge.

Springs in the French Broad River Basin represent an important source of water for rural supplies. They are used for municipal water supply in a few places but their low yields limit the extent to which they can be used for large municipalities and industries.

QUALITY OF GROUND WATER

The chemical analyses of ground water available for inclusion in this report are not adequate to express the quality of spring and well waters throughout the basin area. However, experience derived from studies of the quality of ground water in similar rocks of the Piedmont Plateau suggests that the granites and allied rocks of high silica content generally will yield water of good quality, low in dissolved mineral matter. On the other hand, the hornblendic rocks, containing appreciable quantities of soluble mineral matter, may yield water of somewhat higher dissolved solids but still of good quality. The ground water in all parts of the basin should be suitable for most uses. It may contain slightly less mineral matter than water in similar rocks of the Piedmont Plateau because of the greater circulation of water and, consequently, because it is in contact a shorter time with the rocks through which it passes.

PUBLIC GROUND-WATER SUPPLIES

There are only three small municipal ground-water supplies in the French Broad River Basin, all of which are derived from springs.

Hot Springs, in Madison County, obtains its water by gravity flow from a spring that flows 500,000 gallons per day. An auxiliary spring, yielding 124,000 gallons per day, is used during periods of minimum flow of the main spring. The water is chlorinated.

Bakersville, in Mitchell County, is furnished water collected in reservoirs from five small privately owned springs. The water is not treated.

Little Switzerland, in McDowell County, obtains water from four small springs which flow into two reservoirs. The water is not treated. A well 136 feet deep that yields 30 gallons of water per minute is available for emergencies.

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Records of wells and springs in the French Broad River Basin, N. C. (cont'd)

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No.	Location	Owner or name	Topography	Depth (feet)		Water	Yield gallons	Water-bearing formation	Remarks
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		,				(+) surface)	minute		
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7	Canton	Champion Fibre Co.	Flood Plain	200	9		30	Carolina gneiss	25 ft. of a
						:	0.0		um, 10 ft. of
2	qo	qo	qo	200	9			qo	of
						-			um, 3 ft. of gravel.
m	op	op	qo	183	9		20	op	t. of
						:			gravel,
17	qo	qo	qo	168	9	i	65	qo	، م در
			Ÿ				,		um, ju it. or gravel.
50	op	qo	op	169	9	1	96	op	ے نیا
7.7				4			:		۳٠ .
9	qo	op	op	91	9		B I	qo	It ft. of alluvi-
7	qo	qo	op	102	9		-	op	13 ft. of alluvi-
									• •
ω	do	qo	op	98	9			op	19 ft. of alluvi-
			,		•	:			-
6	op	op	qo	202	9		90	qo	27 ft. of alluvi- um. 50 ft. of
					,		**	•	el.
9	op	do	qo	777	9	!	1	op	40 it. of alluvi- um, 25 ft. of
] [0.70	C. C.	91/1	9			do	graver.
1	O D	3) })		,		um, 15 ft. of
12	op	qo	qo	152	9			op	of alluvi Lthe abov
									wells are cased to bedrock.

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Records of wells and springs in the French Broad River Basin, N.

Remarks		All water came from above 225	It. level. KR ft to hed-		87 ft. to bed- rock, Could not	bail below 95 ft.	` -			4-foot drawdown	ng at 23 gpm.			60 feet to bed-	Seet of	Seet of)
ing			IT. LEV	rock	87 ft. rock.	bail be	rock. level	-		4-foc	guidmud			60 fe	230 feet	228 feet	
Water-bearing formation		Carolina gneiss	- ; (S .	op	10	op	đo		Granite		CO _{MB} and	CERCING CO.			diction of the control of the contro	
Yield gallons per minute		125	*06	t			50	125	:	23♣+	*	たって	20	22	2	2	c
Water level (feet be- low or above (+) surface)		#Date(C)	°	77	59		ιν.	18		***************************************		30	75 25	752	25	30	7.0
Di- ameter (inches)	County (continued	ì	4	0	9		10	9	County	9		99	9.0	9	9	9	_
Depth (feet)	County (1,200	76	0	109		350	124		οττ	*	99	306	330	235	. 233	
Topography	Haywood	Flood plain		LowLand	Slope		Flood plain	Lowland	Henderson	1	:::	- :::	Upland		Flat	qo	
Owner or name		Town of Canton		W. H. Sparks	D. E. Hoyle		Lawrence Leather Company	Dayton Rubber Co.		R. B. Smith		P. Gash J. B. Whiteside	Etowah School	F. W. Lawton Joe Mace	W. C. Justice	Laughton and	Merr
Location		Canton	2 mi. W. of	Waynesville	Waynesville		Hazlewood	qo		Zirconia		Etowah	do	Flat Rock Pleasant	Hill Edneyville	qo	
No。		13	큐		75		음 17년	17		٦		2 6	77	٧٥	~	ω	

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Z	No. Location	Owner or name	Topography	Depth (feet)	Di- ameter (inches)	Water level (feet be- low or above (+) surface)	Yield gallons per minute	Water-bearing formation	Remarks
			Mac	Madison Co	County				
<u> </u>	1 3 mi. E. of	C. B. Jarvis	Steep slope	1	9	077	70	Granite	Analysis
	2 Mars Hill	G. W. Gardner	Hilltop	204	9	120	5#	op	40 ft. to bed-
	3 Peach Glen	John Reagan	Valley	82	9	10	50	Hornblende gneîss	fock. 50 ft. to bed- rock.
			Mit	Witchell (County				
	1 Bakersville 2 do	Bakersville Grade School Buladean School	Lowla nd do	93	9	12 10	35 48	Granite	49 ft. to bed-rock.
775			Trans	Transylvania	a County		,		
l	1 Blantyre	Neil Hawkins	Top of flat hill	1,1	36	8	en cui cui	Weathered granite	Wate cord sinc
	2 Penrose	Merriman Shuford	Knoll	157	9	75	۲۷	Granîte	See graph.
		Penrose Cottage J. B. Talley	Upland slope	121 70	9	70 4,5	T 7	do	
	Forest do	W. J. Bishop C. W. Davîs	Lowland	21	9	8 50	20 6		
	7 Brevard 8 do 9 Rosman	Transylvania Tanning Co. do Toxoway Tanning Co.	Lowland Lowland slope Lowland	225 200 200	9	10	100 20 100	do Augen gneîss	Furnishes part of village with
913		Rosman Public School Austin Hogsed Toxoway Tanning Co.	School Lowland slope do g Co. Lowland	120	9	자하찬	30 20 0 40	do do	Flows 2 gpm.
<u> </u>	3 Fisgan Forest	John Alexander	do	96	9	1/4		Granite	Flows 12 gpm.

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Basin,
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Remarks		Flows 2 gpm.		28 ft. to bed- rock.			-	Oct. 6, 1949.	Oct. 5, 1949.	ا د	of several	springs at this	analysis snows er in parts per 699; sodium	June	1949. Spring head.
Water-bearing formation		Granî te do		Granite	n, and Heath, well	0	Remarks	Temperature of water 57 %.	Sample analyzed. Temperature of water 57°F.	Sample analyzed。 Temperature of water 58°F。	Represents aggregate yield of springs. Sample analyzed.	Temperature of water 104°F. June 7, 1934. This is one of several hot springs at thi	resort town; unidentified analysis shows the following mineral matter in parts per million; calcium sulfate, 699; sodium sulfate, solids, 1.231,	Temperature of water 104°F.	Bathing Springs. Temperature 572°F. Oct. 4, 1949. emerges from steep valley head.
Yield gallons per minute		20		7	y, Shipman,			Temperat	Sample a Temperat	Sample a Temperat	Represent springs.	Temperat This is	resort to the follo million;	Temperat Chemical	Bathing Sprir Temperature 5 emerges from
Water level (feet be- low or above (+) surface)	(continued)	*3 20	,	6	Wessrs. McQuary, N. C.		Yield (g.p.m.)	5	ಹ	2	300	100		300	77
Di-) ameter (inches)	County	99	ey County	9	were drilled by Me Co. of Hickory, N.	Springs	earing on			gneiss		ntiated ry rocks			s t
Depth (feet)	Transylvania	100	Yancey	77		Records of	Water-bearing formation	Granite	do	Carolina	Quartzite	Undifferentiated sedimentary rocks		op	Mica schist
Topography	I	do Flat		Lowland	Most of the wells listed in the tables above Penrose, N. C., and by Hickory Well Drilling		Name of spring or owner	(B) Malvern Springs	Sloan	edford	Springs	Springs		Spring	stin
or name		ton Crary		s Store	isted in t by Hickor		Name of or owner	(B) Malve	(A) Hugh Sloan	Dallas Redford	Cascade S	Bathing S		Drinking	W. K. Austin
Owner		Paul Sitton J. B. McCrary		Proffit s	he wells I N. C., and		Location	5 mi. W. of	Asheville Hazelwood	4 mi. NE. of	1 mi. NE. of Hot Springs	Springs		qo	l mi. N. of Blantyre
Location		Pisgah Forest Penrose		Ball Creek	Most of the well Penrose, N. C.,										y1-
No°		14 P. 15 P. 15		L1 XX		17	County	Buncombe	Haywood	Madison	op	qo		မို	Transyl-

CHEMICAL ANALYSES, IN PARTS PER MILLION, OF WATER FROM WELLS AND SPRINGS IN THE FRENCH BROAD RIVER BASIN

(Analyzed by the U. S. Geological Survey. Well or spring numbers correspond to the number in the tables of well data)

		iminer's correspond to the number in the tables of well data)	Lesboua	CO CLI	omun e	EL TU	cne tat	TO SAT	vell dat	, G.)					
Location	Well or spring no.	Date	Sili- Iron ca (Fe)		Man- ga- nese (Mn)	Cal- cium (Ca)	Mag- ne- sium (Mg)	Sodium Bi- and po- car- tassium bon- (Na+K) ate (HCO	53)	Sul- fate (SO ₄)	Sul- Chlo- Fluo- fate ride ride (SO ₄) (Cl) (F)	Fluo- ride (F)	Ni- trate (NO ₃)	Dis- Total solved hard-solids ness as CaCO ₃	Total hard- ness as CaCO ₃
Buncombe Co. Spring Asheville B	Spring B	10- 6-49	27	90°0	00°0	13	2°5	13	70	ν. ω̂	3.4	6°0	0.1	106	7,2
Haywood Co.	Spring A	10- 6-49	23	°05	00°	13	2°7	9°8	58	8,3	4,5	7°	⊢	100	1,2
Madison Co. Hot Springs	Cascade Spring	12- 3-46	13	10°	00°	1,2	ρů	0°7	11	2 م	1,0	S	۲,	28	\mathcal{N}
Mars Hill Transylvania	Well l	10- 5-49	22	°24	00°	3.4	1.6	8.7	38	۲, ۲	6.	٦.	°,2	61	15
Co. Rosman	Well ll	10- 4-49	16	91°	00°	7.0 2.5	2.5	5.9	30	T, T	4.2	O,	11	72	28





